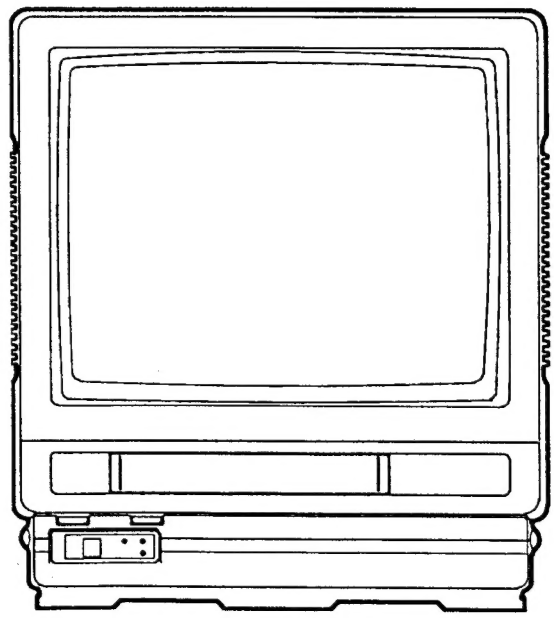
FUNAI

SERVICE MANUAL

14" COLOR TV / VCR COMBINATION

TVR-1400A MK6



GENERAL SPECIFICATIONS

A) System	
1) CRT:	14", Tinted Tube
2) Color system:	PAL / MESECAM NTSC 4.43 (Playback only)
3) Receivable channel: (C.C.I.R. ch + O.I.R.T. ch)	System B/G [VHF L]...E2~E4ch [VHF H]...E5~E12ch [UHF].....21~69ch System D/K [VHF L]....R1~R5ch [VHF H]...R6~R12ch [UHF].....21~69ch
4) Tuning system:	Voltage synthesizer (40 stations can be memorized) Automatic channel preset
5) Control knobs	
Main switch:	Push switch (rear side)
Power:	Key
Volume:	2-Keys (up/down)
Channel:	2-Keys (up/down)
Play:	Key
Stop/Eject:	Key
Fast Forward:	Key
Rewind:	Key
Record:	Key
6) External connections	
Antenna:	75Ω IEC jack
Video in:	BNC jack
Audio in:	RCA jack
Earphone jack:	ø3.5mm jack (switched)
Power supply:	AC inlet
7) Degauss:	Automatic Degaussing (D. G. system runs as main power switch is Turned on.)
8) Speaker:	3" round type
9) Audio output power:	0.9 W
B) VCR	
1) Recording system:	Twin head herical scanning HQ system
2) Loading system:	Front loading
3) Video signal:	PAL 625 lines, 50Hz
4) Tape format:	Width 1/2", 1 Audio track
5) Rec/Play time:	4 hours (PAL/MESECAM, E-240) 2 hours 40 minutes (NTSC, T-160)
6) Tape speed:	23.39 mm/sec (PAL/MESECAM) 33.40 mm/sec (NTSC)
7) Timer recording:	1 month, 4 events (Daily or weekly recording is available.)
8) One touch timer recording:	Every 30 minutes, 8 hours max
9) Auto functions:	Power On/Off, Play, Rewind, Eject, Rerpert
C) IR Remote Control:	(29 keys) Power, Call, Sleep, 10 numerical keys (0~9) Mute, Program, Select, Channel/Tracking Up, Channel/Tracking Down, Clear/Reset, Memory, Volume/Control Up, Volume/Control Down, Rew, Play, F. Fwd, Pause/Still, Timer set, Stop, Record
D) Indicators	(LED) Stand by (Green), Rec (Red), Timer rec (Red)
E) Mechanical	
1) Dimensions:	362(W)X366(D)X399(H) mm
2) Cabinet:	All plastic cabinet
3) CRT cover	Acryle mold
4) Weight:	14.0Kg
5) Packing weight:	15.5Kg
F) Power supply	
1) Rating requirement:	AC 220V (50Hz)
2) Consumption:	75W
G)Miscellaneous	
1) Head life time:	1000H (Change tape at every 200H)
2) Safety Regulations:	IEC-65 passable
H) Accessories.	
1) Remote control unit	
2) Battery "R03" X 2	
3) Monopole antenna for VHF/UHF	
3) AC cord set (with IEC type A plug)	
4) Owner's manual	

PERFORMANCE SPECIFICATIONS

* Test input terminal ••••••• Video input (1Vp-p)
••••••• Audio input (-10dBs)

<TUNER>

Description	Condition	Unit	Nominal	Limit
1. Channel	VHF Low	CH	E2-E4/R1-R5	—
CCIR ch / OIRT ch	VHF High	CH	E5-E12/R6-R12	—
	UHF	CH	21-69	—
2. Intermediate freq.	Picture	MHz	38.0	—
	Sound	MHz	32.5/31.5	—
3. Video S/N	(E10 ch)	dB	44	38
4.Audio S/N (W/LPF)	(E10 ch)	dB	45	38

<DEFLECTION>

Description	Condition	Unit	Nominal	Limit
1. Deflection frequency	Horizontal			
	(PAL/SECAM)	KHz	15.625	—
	(NTSC)	KHz	15.734	—
	Vertical			
	(PAL/SECAM)	Hz	50	—
	(NTSC)	Hz	60	—
2. Over Scan	—	%	90	—
3. Linearity	Horizontal	%	—	10
	Vertical	%	—	7
4. High Voltage	—	KV	22	—

<VIDEO & CHROMA>

Description	Condition	Unit	Nominal	Limit
1. Misconvergence	Center	m/m	—	0.3
	Corner	m/m	—	1.5
	Side	m/m	—	1.2
2. Contrast Control Range	—	dB	6	4
3. Brightness	APL 100%	ft-L	55	40
4. Color Temperature	—	°K	8000-10MPCD	—
5. Resolution	Horizontal	Line	300	280
	Vertical	Line	300	270

<AUDIO>

All items are measured across 8Ω speaker output terminal.

Description	Condition	Unit	Nominal	Limit
1. Audio Max. Output	—	W	0.9	0.7
2. Audio S/N (W/LPF)	500mW	dB	45	38
3. Audio Distortion (W/LPF)	500mW	%	3	5
4. Audio Freq. Response (W/LPF)	50mW	200Hz dB	-3	-7
	-20dBs in	6KHz dB	+2	-5

<VCR>

Description	Condition	Unit	Nominal	Limit
1. Horizontal Resolution	F6M	Line	230	220
2. Audio S/N ratio	F6A	dB	40	35
3. Wow & Flutter WRMS/CCIR	F6L	%	0.3	0.5
4. Jitter	F6N	µS	0.07	0.25
5. Audio S/N ratio	R/P	dB	41	37
6. Audio Freq. resp. 200Hz	-20dBs in	dB	-3.6	±8
6KHz	R/P	dB	+2.2	±8

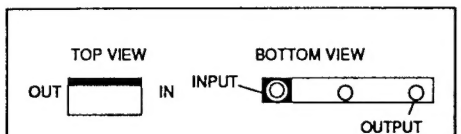
Note: Nominal specifications represent the design specifications. All units should be able to approximate these-some will exceed and some may drop slightly below these specifications. Limit specifications represent the absolute worst condition that still might be considered acceptable; in no case should a unit fail to meet limit specifications.

B6403SP2

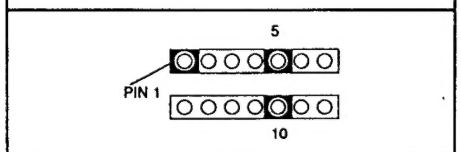
STANDARD NOTES FOR SERVICING

Circuit Board Indications

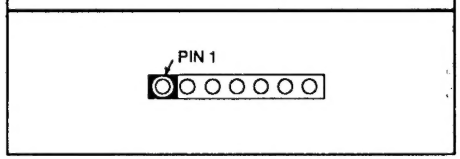
a. The output pin of the 3 pin Regulator ICs is indicated as shown:



b. For other ICs, pin 1 and every fifth pin are indicated as shown:

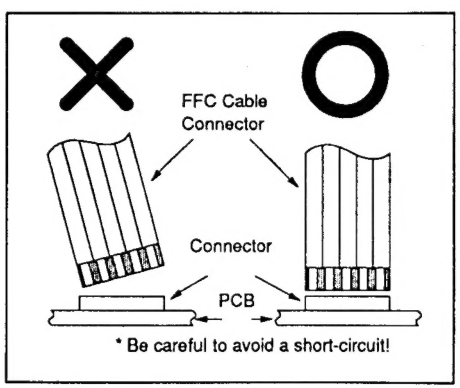


c. The 1st pin of every pin connector are indicated as follows:



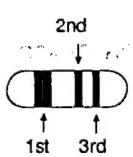
Instructions for Connectors

1. When you connect or disconnect FFC (Flexible Foil Connector) cable (connector), be sure to disconnect the AC cord.
2. FFC cable (connector) should be inserted parallel into the connector, not at an angle.



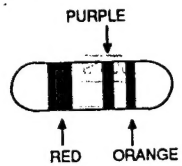
How to Read the Values of the Cylindrical Type Chip Components

The widest color band must be read first for value.



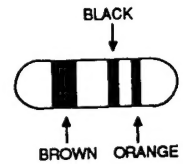
EXAMPLE :

(a) Resistor



= 273 = 27 [kΩ]

(b) Capacitor



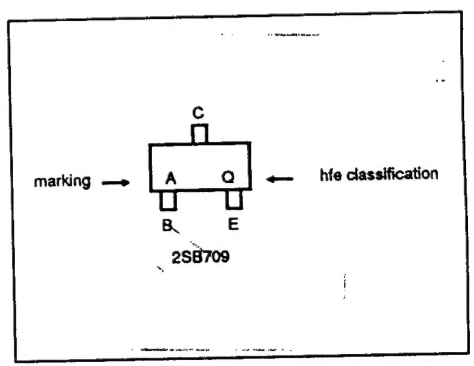
= 103 = 0.01 [uF]

CAUTION:

Once chip parts (Resistors, Capacitors, Transistors, etc.) are removed, they must not be reused. Always use a new part.

How to Read the Identification Mark of Chip Transistors in this Unit.

MARKING	PART NO.
A	2SB709
U	2SC2404
Y	2SD601
1D	2SD1328
25	DTC124EK
26	DTC144EK
2Y	2SC3757
6C	UN2113
8B	UN2212
8C	UN2213



Replacement Procedures for Leadless (Chip) Components

The Following Procedures are Recommended for the Replacement of the Leadless Components Used in this Unit.

1. Preparation for replacement

a. Soldering Iron
Use a pencil-type soldering iron (less than 30 watts).

b. Solder
Eutectic solder (Tin 63%, Lead 37%) is recommended.

c. Soldering time
Do not apply heat for more than 4 seconds.

d. Preheating
Leadless capacitor must be preheated before installation.
(130℃-150℃, for about two minutes.)

Note:

a. Leadless components must not be reused after removal.
b. Excessive mechanical stress and rubbing for the component electrode must be avoided.

inspection, nor can the protection they give necessarily be obtained by replacing them with components rated for higher voltage, wattage, etc.. Parts that have special safety characteristics are identified by a (⚠) on schematics and in parts lists. Use of a substitute replacement that does not have the same safety characteristics as the recommended replacement part might create shock, fire, and/or other hazards. The Product's Safety is under review continuously and new instructions are issued whenever appropriate. Prior to shipment from the factory, our products are strictly inspected to confirm with the recognized product safety and electrical codes of the countries in which they are to be sold. However, in order to maintain such compliance, it is equally important to implement the following precautions when a set is being serviced.

Precautions during Servicing

A. Parts identified by the (⚠) symbol are critical for safety.
Replace only with part number specified.

B. In addition to safety, other parts and assemblies are specified for conformance with regulations applying to spurious radiation. These must also be replaced only with specified replacements.
Examples: RF converters, RF cables, noise blocking capacitors, and noise blocking filters, etc.

C. Use specified internal wiring. Note especially:
1) Wires covered with PVC tubing
2) Double insulated wires
3) High voltage leads

D. Use specified insulating materials for hazardous live parts. Note especially:
1) Insulation Tape
2) PVC tubing
3) Spacers
4) Insulators for transistors.

E. When replacing AC primary side components (transformers, power cord, etc.), wrap ends of wires securely about the terminals before soldering.

F. Observe that the wires do not contact heat producing parts (heatsinks, oxide metal film resistors, fusible resistors, etc.)

G. Check that replaced wires do not contact sharp edged or pointed parts.

H. When a power cord has been replaced, check that 10-15 kg of force in any direction will not loosen it.

I. Also check areas surrounding repaired locations.

J. Use care that foreign objects (screws, solder droplets. etc.) do not remain inside the set.

K. Crimp type wire connector
When replacing the power transformer in sets where the connections between the power cord and power transformer primary lead wires are performed using crimp type connectors, in order to prevent shock hazards, perform carefully and precisely the following steps.
Replacement procedure
1) Remove the old connector by cutting the wires at a point close to the connector.
Important: Do not re-use a connector (discard it).
2) Strip about 15 mm of the insulation from the ends of the wires. If the wires are stranded, twist the strands to avoid frayed conductors.
3) Align the lengths of the wires to be connected. Insert the wires fully into the connector.
4) Use the crimping tool to crimp the metal sleeve at the center position. Be sure to crimp fully to the complete closure of the tool.

L. When connecting or disconnecting the VCR connectors, first, disconnect the AC plug from AC supply socket.

Safety Check after Servicing

Examine the area surrounding the repaired location for damage or deterioration. Observe that screws, parts and wires have been returned to original positions. Afterwards, perform the following tests and confirm the specified values in order to verify compliance with safety standards.

1. Clearance Distance

When replacing primary circuit components, confirm specified clearance distance (d) and (d') between soldered terminals, and between terminals and surrounding metallic parts. (See Fig. 1)

Table 1 : Ratings for selected area

AC Line Voltage	Region	Clearance Distance (d) (d')
200 to 240 V	Europe Australia	≥ 4mm (d) ≥ 6mm (d')

Note: This table is unofficial and for reference only. Be sure to confirm the precise values.

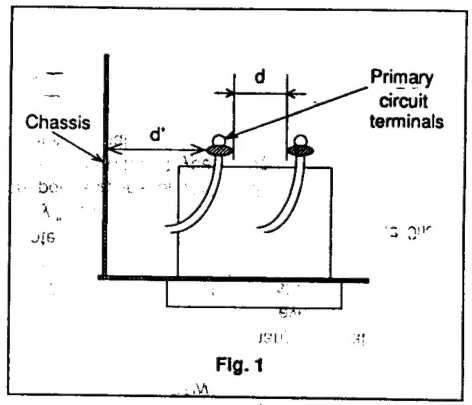


Fig. 1

2. Leakage Current Test

Confirm specified (or lower) leakage current between B (earth ground, power cord plug prongs) and externally exposed accessible parts (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.).

Measuring Method : (Power ON)
Insert load Z between B (earth ground, power cord plug prongs) and exposed accessible parts. Use an AC voltmeter to measure across both terminals of load Z. See Fig. 2 and following table.

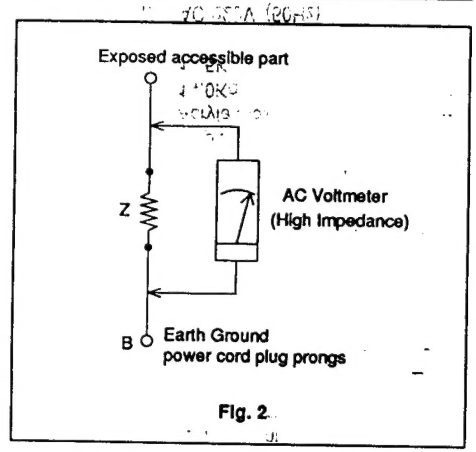


Fig. 2

Table 2 : Leakage current ratings for selected areas

AC Line Voltage	Region	Load Z	Leakage Current (i)	Earth Ground (B) to:
200 to 240 V	Europe Australia	2kΩ RES. in connected	i≤0.7mA rms i≤2mA dc	Antenna terminals
		50kΩ RES. in connected	i≤0.7mA rms i≤2mA dc	Other terminals

Note: This table is unofficial and for reference only. Be sure to confirm the precise values.

IMPORTANT SAFETY PRECAUTIONS

Prior to shipment from the factory, our products are strictly inspected for recognized product safety and electrical codes of the countries in which they are to be sold. However, in order to maintain such compliance, it is equally important to implement the following precautions when a set is being serviced.

Safety Precautions for TV Circuit

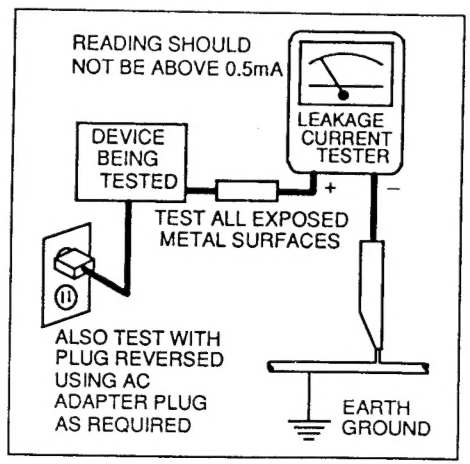
1. **Before returning an instrument to the customer,** always make a safety check of the entire instrument, including, but not limited to, the following items:

   a. Be sure that no built-in protective devices are defective and have been defeated during servicing. (1) Protective shields are provided on this chassis to protect both the technician and the customer. Correctly replace all missing protective shields, including any removed for servicing convenience. (2) When reinstalling the chassis and/or other assembly in the cabinet, be sure to put back in place all protective devices, including but not limited to, nonmetallic control knobs, insulating fishpapers, adjustment and compartment covers/shields, and isolation resistor/capacitor networks. **Do not operate this instrument or permit it to be operated without all protective devices correctly installed and functioning. Servicers who defeat safety features or fail to perform safety checks may be liable for any resulting damage.**

   b. Be sure that there are no cabinet openings through which an adult or child might be able to insert their fingers and contact a hazardous voltage. Such openings include, but are not limited to, (1) spacing between the picture tube and the cabinet mask, (2) excessively wide cabinet ventilation slots, and (3) an improperly fitted and/or incorrectly secured cabinet back cover.

   c. **Antenna Cold Check -** With the instrument AC plug removed from any AC source, connect an electrical jumper across the two AC plug prongs. Place the instrument AC switch in the on position. Connect one lead of an ohmmeter to the AC plug prongs tied together and touch the other ohmmeter lead in turn to each tuner antenna input exposed terminal screw and, if applicable, to the coaxial connector. If the measured resistance is less than 1.0 megohm or greater than 5.2 megohm, an abnormality exists that must be corrected before the instrument is returned to the customer. Repeat this test with the instrument AC switch in the off position.

   d. **Leakage Current Hot Check -** With the instrument completely reassembled, plug the AC line cord directly into a AC outlet. (Do not use an isolation transformer during this test.) Use a leakage current tester. With the instrument AC switch first in the on position and then in the off position, measure from a known earth ground (metal water pipe, conduit, etc.) to all exposed metal parts of the instrument (antennas, handle brackets, metal cabinet, screw heads, metallic overlays, control shafts, etc.), especially any exposed metal parts that offer an electrical return path to the chassis. Any current measured must not exceed 0.5 milliampere. Reverse the instrument power cord plug in the outlet and repeat the test.



ANY MEASUREMENTS NOT WITHIN THE LIMITS SPECIFIED HEREIN INDICATE A POTENTIAL SHOCK HAZARD THAT MUST BE ELIMINATED BEFORE RETURNING THE INSTRUMENT TO THE CUSTOMER OR BEFORE CONNECTING THE ANTENNA OR ACCESSORIES.

   e. **X-Radiation and High Voltage Limits -** Because the picture tube is the primary potential source of X-radiation in solid-state TV receivers, it is specially constructed to prohibit X-radiation emissions. For continued X-radiation protection, the replacement picture tube must be the same type as the original. Also, because the picture tube shields and mounting hardware perform an X-radiation protection function, they must be correctly in place. High voltage must be measured each time servicing is performed that involves B+, horizontal deflection or high voltage. Correct operation of the X-radiation protection circuits also must be reconfirmed each time they are serviced. (X-radiation protection circuits also may be called "horizontal disable" or "hold down.") Read and apply the high voltage limits and, if the chassis is so equipped, the X-radiation protection circuit specifications given on instrument labels and in the Product Safety & X-Radiation Warning note on the service data chassis schematic. High voltage is maintained within specified limits by close tolerance safety-related components/adjustments in the high-voltage circuit. If high voltage exceeds specified limits, check each component specified on the chassis schematic and take corrective action.

2. Read and comply with all caution and safety-related notes on or inside the receiver cabinet, on the receiver chassis, or on the picture tube.

3. **Design Alteration Warning -** Do not alter or add to the mechanical or electrical design of this TV receiver. Design alterations and additions, including, but not limited to circuit modifications and the addition of items such as auxiliary audio and/or video output connections, might alter the safety characteristics of this receiver and create a hazard to the user. Any design alterations or additions will void the manufacturer's warranty and may make you, the servicer, responsible for personal injury or property damage resulting therefrom.

4. **Picture Tube Implosion Protection Warning -** The picture tube in this receiver employs integral implosion protection. For continued implosion protection, replace the picture tube only with one of the same type number. Do not remove, install, or otherwise handle the picture tube in any manner without first putting on shatterproof goggles equipped with side shields. People not so equipped must be kept safely away while picture tubes are handled. Keep the picture tube away from your body. Do not handle the picture tube by its neck. Some "in-line" picture tubes are equipped with a permanently attached deflection yoke; because of potential hazard, do not try to remove such "permanently attached" yokes from the picture tube.

5. **Hot Chassis Warning -**

   a. Some TV receiver chassis are electrically connected directly to one conductor of the AC power cord and may be safety-serviced without an isolation transformer only if the AC power plug is inserted so that the chassis is connected to the ground side of the AC power source. To confirm that the AC power plug is inserted correctly, with an AC voltmeter, measure between the chassis and a known earth ground. If a voltage reading in excess of 1.0V is obtained, *remove and reinsert the AC power plug in the opposite polarity and again measure the voltage potential between the chassis and a known earth ground.

   b. Some TV receiver chassis have a circuit which obtain voltage about 70% of AC voltage between chassis and earth ground regardless of the AC plug polarity. This chassis can be safety-serviced only with an isolation transformer inserted in the power line between the receiver and the AC power source, for both personnel and test equipment protection.

   c. Some TV receiver chassis have a secondary ground system in addition to the main chassis ground. This secondary ground system is not isolated from the AC power line. The two ground systems are electrically separated by insulation material that must not be defeated or altered.

   Note: * In case unit has no polarity AC plug only.

6. Observe original lead dress. Take extra care to assure correct lead dress in the following areas: a. near sharp edges, b. near thermally hot parts-be sure that leads and components do not touch thermally hot parts, c. the AC supply, d. high voltage, and e. antenna wiring. Always inspect in all areas for pinched, out of place, or frayed wiring. Check AC power cord for damage.

7. Components, parts, and/or wiring that appear to have overheated or are otherwise damaged should be replaced with components, parts, or wiring that meet original specifications. Additionally, determine the cause of overheating and/or damage and, if necessary, take corrective action to remove any potential safety hazard.

8. **Product Safety Notice -** Some electrical and mechanical parts have special safety-related characteristics which are often not evident from visual

2. Removing the leadless component

Grasp the leadless component body with tweezers and alternately apply heat to both electrodes. When the solder on both electrodes has melted, remove leadless component with a twisting motion.

Note:

a. Do not attempt to lift the component off the board until the component is completely disconnected from the board by the twisting action.

b. Take care not to break the copper foil on the printed board.

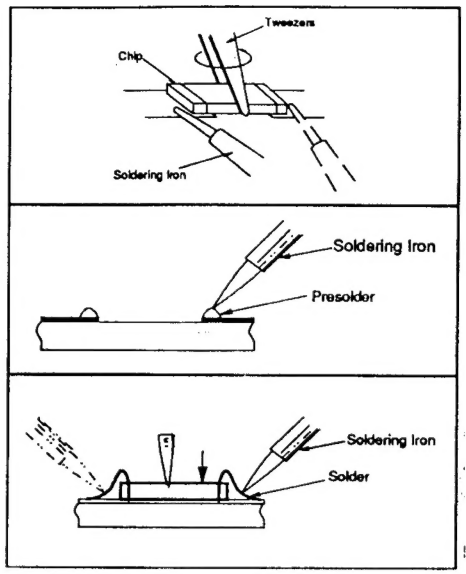
3. Installing the leadless component

a. Presolder the contact points of the circuit board.

b. Press the part downward with tweezers and solder both electrodes as shown at right:

Note:

Do not glue the replacement leadless component to the circuit board.



How to Remove / Install Flat Pack IC

1. Removal

With Hot - Air Flat Pack - IC Desoldering Machine:

(1)Prepare the HOT - AIR FLAT PACK - IC DESOLDERING MACHINE, then apply hot air to Flat Pack - IC (about 5~6 seconds). (Fig. S-1-1)

(2)Remove the Flat Pack- IC with tweezers while applying the hot air.

Caution:

1. Do not supply the hot air to the chip parts around the Flat Pack - IC for over 6 seconds as damage may occur to the chip parts. Put Masking Tape around the Flat Pack-IC to protect other parts from damage. (Fig. S-1-2)
2. The Flat Pack - IC on the P.C.B. is affixed with glue, so be careful not to break or damage the foil of each pin or solder lands under the IC when removing it.

With Soldering Iron:

(1)Using desoldering braid, remove the solder from all pins of the Flat Pack - IC. When you use solder flux which is applied to all pins of the Flat Pack - IC, you can remove it easily. (Fig. S-1-3)

(2)Lift each lead of the Flat Pack - IC upward one by one, using a sharp pin or wire to which solder will not adhere (iron wire). When heating the pins, use a fine tip soldering iron or a hot air Desoldering Machine. (Fig. S-1-4)

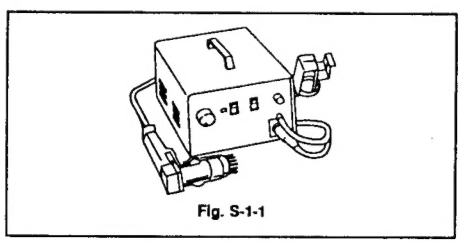


Fig. S-1-1

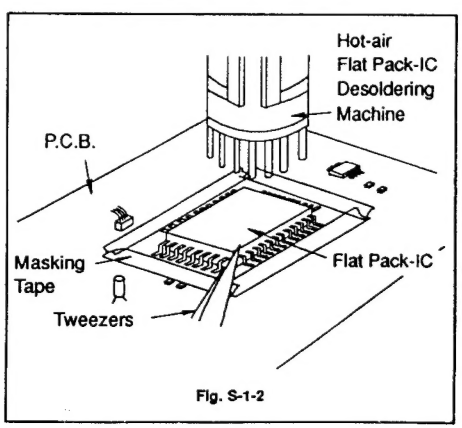


Fig. S-1-2

With Iron Wire:

(1)Using desoldering braid, remove the solder from all pins of the Flat Pack - IC. When you use solder flux which is applied to all pins of the Flat Pack - IC, you can remove it easily. (Fig. S-1-3)

(2)Affix the wire to a workbench or solid mounting point, as shown in Fig. S-1-5.

(3)Pull up on the wire as the solder melts so as to lift the IC leads from the P.C.B. contact pads, while heating the pins using a fine tip soldering iron or hot air blower.

Note:

When using a soldering iron, care must be taken to ensure that the Flat Pack - IC is not being held by glue, or when it is removed from the P.C.B., it may be damaged if force is used.

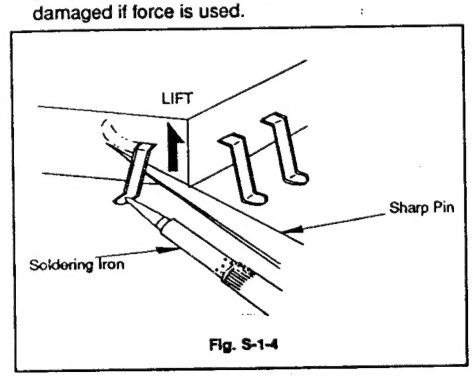


Fig. S-1-4

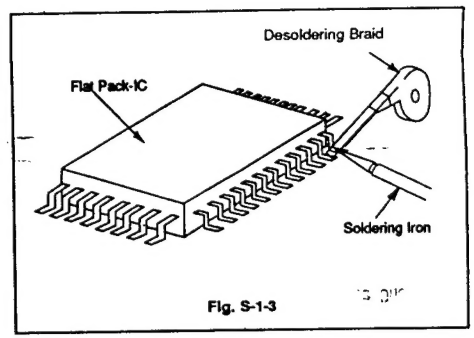


Fig. S-1-3

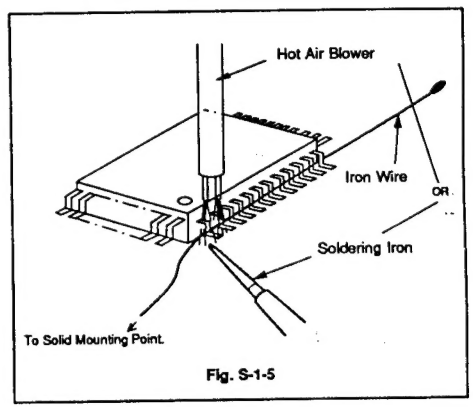


Fig. S-1-5

2. Installation

(1)Using desoldering braid, remove the solder from the foil of each pin of the Flat Pack - IC on the P.C.B., so you can install a replacement Flat Pack - IC more easily.

(2)The "●" mark on the Flat Pack - IC indicates pin 1 (See Fig. S-1-6). Make sure this mark matches the 1 on the P.C.B. when positioning for installation. Then pre - solder the four corners of the Flat Pack- IC (See Fig. S-1-7).

(3)Solder all pins of the Flat Pack - IC. Make sure that none of the pins have solder bridges.

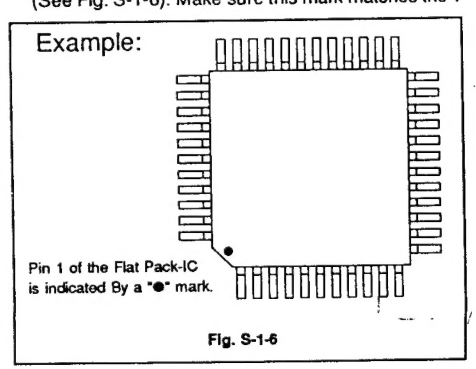


Fig. S-1-6

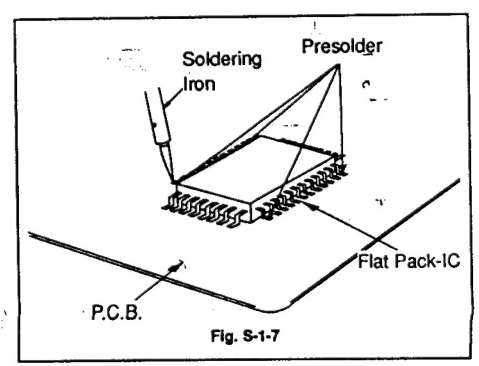
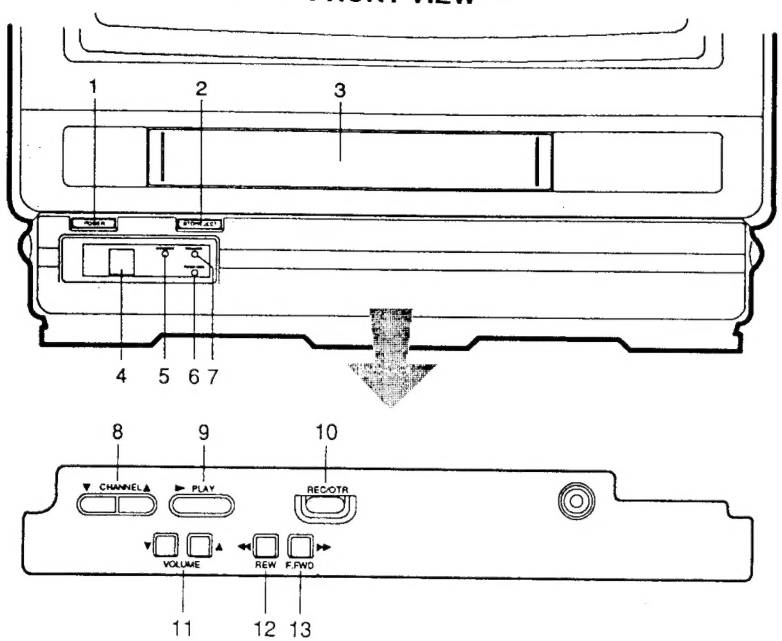


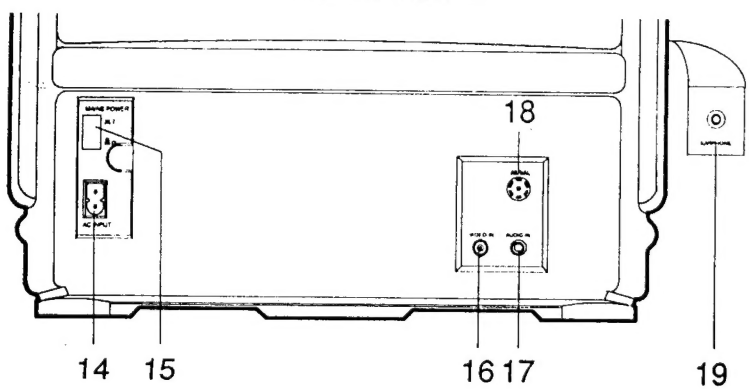
Fig. S-1-7

OPERATING CONTROLS AND FUNCTIONS

— FRONT VIEW —



— REAR VIEW —



1 **POWER button**– To turn the unit on and off.
2 **STOP/EJECT button**– To stop tape motion and remove the tape from VCR.
3 **CASSETTE COMPARTMENT**
4 **REMOTE SENSOR**– Receives the infrared control signals from the handheld remote control unit.
5 **STANDBY indicator** - Lights when the AC plug is inserted into the AC outlet and Mains Power switch is ON.
6 **TIMER REC indicator** - Lights when in the Timer Recording mode.
7 **RECORD indicator** - Lights when in the Recording mode.
8 **CHANNEL ▼ / ▲ button**– To select desired channel number by pressing either "▼" or "▲" button. They may also be used to adjust tracking control when tape is in play mode. They can not be used during TIMER RECORDING.
9 **PLAY ▶ button**– To begin playback of a tape.
10 **REC/OTR button**– Press to begin manual recording and activate one touch recording mode.
11 **VOLUME ▼ / ▲ button**– To adjust the volume level.
12 **REW ◀◀ button**– To rewind tape or to view video in reverse during play mode at a faster than normal speed. Press play button to return VCR to normal playback speed.
13 **F.FWD ▶▶ button**– To advance tape faster than normal or to view video, in forward direction, during play mode at a faster than normal speed. Press play button to return VCR to normal playback speed.
14 **AC INPUT**– Connect the AC cord.
15 **MAINS POWER**– Switches the mains supply on and off. (Set switch ON position at the factory.)
16 **VIDEO INPUT jack**– Connect to video output jack of your video camera or another VCR.
17 **AUDIO INPUT jack**– Connect to audio output jack of a video camera or another VCR.
18 **AERIAL jack**– Connect 75-ohm antenna.
19 **EARPHONE jack**–To connect earphones (not supplied) for personal listening. This mutes the speaker.

B6407IB1

Cleaning

1. Cleaning of Video Head

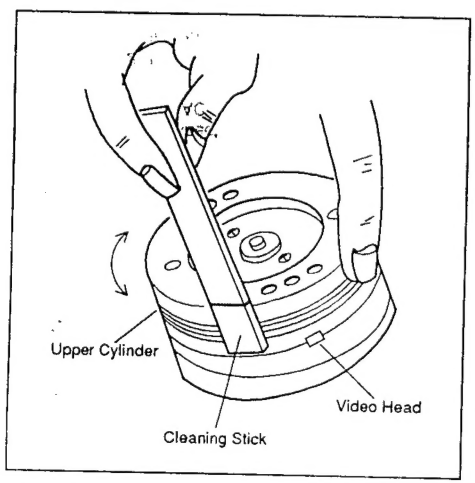
Use a Head Cleaning Stick.

Procedure

1. Remove the top cabinet.
2. Put on a glove (thin type) to avoid touching the upper drum and lower drum with bare hands.
3. Put a few drops of 91° Isoprophyl Alcohol on the Head Cleaning Stick, and by slightly placing it against the head tip, allow the upper drum to turn to the right and left.

NOTE:

1. The video head is very hard material, but since it is very thin, avoid cleaning it vertically.
2. Wait for the cleaned part to dry out before operating the unit, or damage will occur.
3. Do not reuse the stained Head Cleaning Stick.



2. Cleaning of Audio Control Head

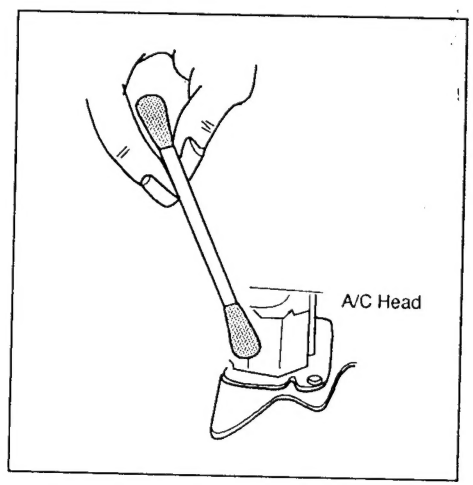
Use a cotton swab.

Procedure

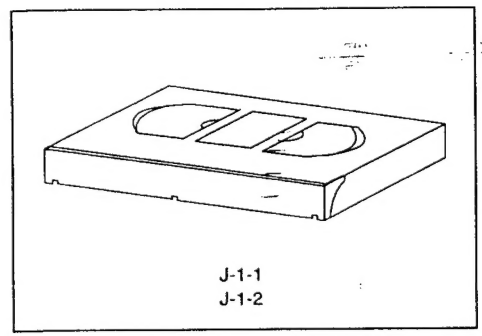
1. Remove the top cabinet.
2. Put a few drops of 91% Isoprophyl Alcohol on the cotton swab, and clean up the audio control head, being careful not to damage the upper drum and other tape running parts.

NOTE:

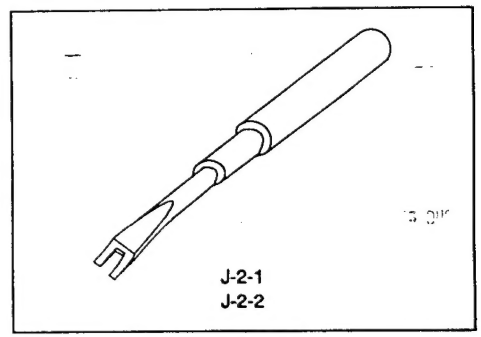
1. Avoid cleaning audio control head vertically.
2. Wait for the cleaned part to dry out, before operating the unit, or damage will occur.



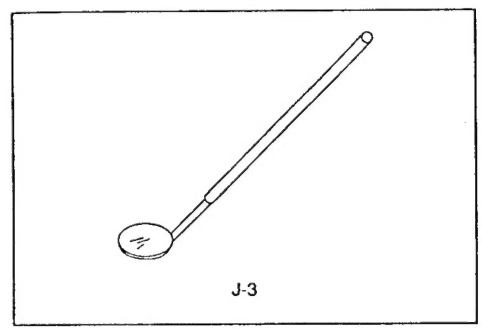
SERVICE FIXTURES AND TOOLS



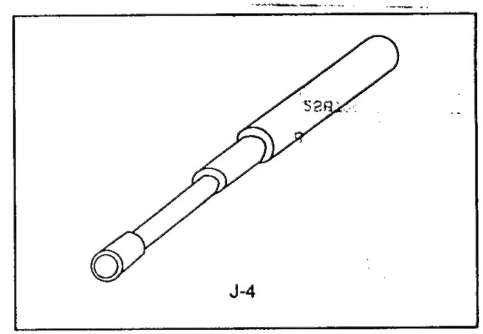
J-1-1
J-1-2



J-2-1
J-2-2



J-3



J-4

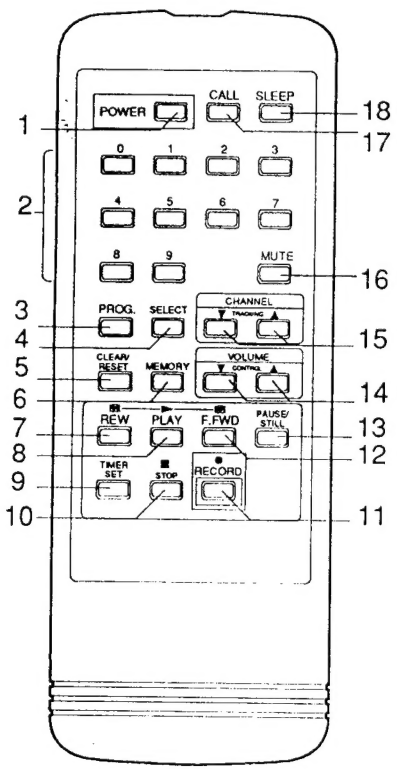
Ref. No.	Name	Adjustment
J-1-1	Alignment Tape (F6-A)	Head Adjustment of Audio Control Head
J-1-2	Alignment Tape (F6-N): 2 Head 1 Speed Model	Azimuth Adjustment of Audio Control Head / X Value / Confirmation / Adiustment of Envelope Waveform
J-2-1	Special Driver Large (FSJ-0001)	X Value
J-2-2	Special Driver Small (FSJ-0006)	Guide Roller
J-3	Mirror (FSJ-0004)	Tape Transportation Check
J-4	Box Driver, Mx3 (FSJ-0005)	Guide Pole / A/C Head Height

REMOTE CONTROL OPERATION

You can operate most of tape transport functions and TV control functions from the Remote Control (included). The buttons on the Remote Control have the same functions as the corresponding buttons on the unit.

HOW TO USE REMOTE CONTROL

1 POWER button– To turn the unit on and off.



2 NUMBER buttons– To select desired channels and menu. They cannot be used to set desired channel during Timer Recording. To select channels 1 to 9, first press the 0 button and then press desired channel button 1 to 9.

3 PROG. button– To set CLOCK, LANGUAGE SELECT, PRESETTING OF THE CHANNELS, TIMER RECORD PROGRAM and REPEAT MODE.

4 SELECT button – To select setting mode and adjust picture controls.

5 CLEAR/RESET button– To reset counter to 0000. And channel memory delete.

6 MEMORY button– To set counter memory on and off. And channel memory add.

7 REW button– To rewind tape or to view video in reverse during play mode at a faster than normal speed. Press PLAY button to return normal playback speed.

8 PLAY button– To playback the tape.

9 TIMER SET button – To activate the automatic recording timer.

10 STOP button– To stop the tape.

11 RECORD button– To begin recording.

12 F.FWD button– To advance tape, or to view video in forward direction during play mode at a faster than normal speed. Press PLAY button to return normal playback speed.

13 PAUSE/STILL button– To stop the tape, temporarily during playback or recording. To view a still picture during playback.

14 VOLUME/CONTROL buttons– To adjust desired volume level by pressing either "▼" or "▲" button. They may also be used to adjust the picture control.

15 CHANNEL/TRACKING buttons– To select desired channel number by pressing either "▼" or "▲" button. They may also be used to adjust tracking control when tape is in play mode. They can not be used during TIMER RECORDING.

16 MUTE button – To mute sound. Press again to resume sound.

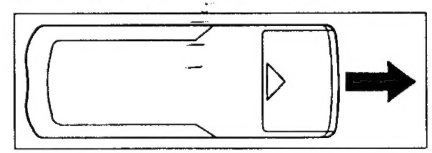
17 CALL button– To call channel display, counter number, and the current time on the screen.

18 SLEEP button– To activate the sleep function.

INSTALLING THE BATTERIES

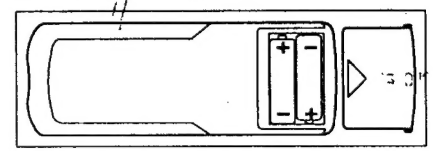
1

Slide the battery compartment cover on the remote unit in the direction of the arrow.



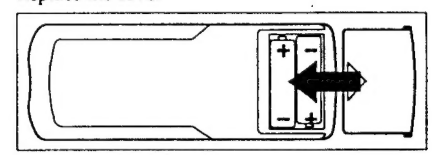
2

Insert 2 "R03" penlight batteries into the battery compartment in the direction as indicated by the polarity (+/-) markings.



3

Replace the cover



Instructions for Handling Semiconductors

Electrostatic breakdown of the semiconductors may occur due to a potential difference caused by electrostatic charge during unpacking or repair work.

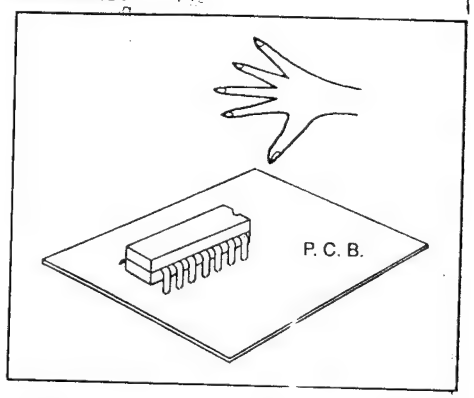
Ground for Human Body

Be sure to wear a grounding band (1M ohm) that is properly grounded to remove any static electricity that may be charged on the body.

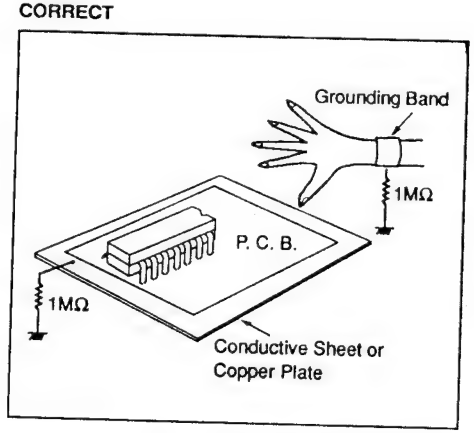
Ground for Work Bench

Be sure to place a conductive sheet or copper plate with proper grounding (1M ohm) on the work bench or other surface, where the semiconductors are to be placed. Because the static electricity charge on the clothing will not escape through the body grounding band, be careful to avoid contacting semiconductors to clothing.

INCORRECT



CORRECT



STANDARD MAINTENANCE

Service Schedule of Components

H: Hours O: Check ●: Change

Deck		Periodic Service Schedule			
Ref. No.	Parts Name	1,000 H	2,000 H	3,000 H	4,000 H
2	Upper Drum	O	●	O	●
134	Pinch Roller (A)		●		●
171	Capstan Motor Assembly		●		●
229	Clutch Assembly		●		●
281	LM Assembly (Loading Motor)			●	
173	Main Belt		●		●
196	Back Tension Band		●		●
233	Drive Belt		●		●
251	Brake Shoe		●		●
285	Loading Belt		●		●
373	Front Loading Belt		●		●
14, 19	Drum Ground			●	
82	ACE Head (Play only model: AC Head)			●	
* 92	Full Erase Head			●	
121	Reel Assembly			●	

Note:

1. Clean all parts for the tape transport (Upper Drum with video head / Pinch Roller / Audio Control Head / Full Erase Head) using 91% Isoprophyl Alcohol.
2. After cleaning up the parts, perform all DECK ADJUSTMENTS.
3. All Reference Numbers listed above refer to parts shown on Deck Exploded View.
4. Parts marked * are used in Rec/Play model only.

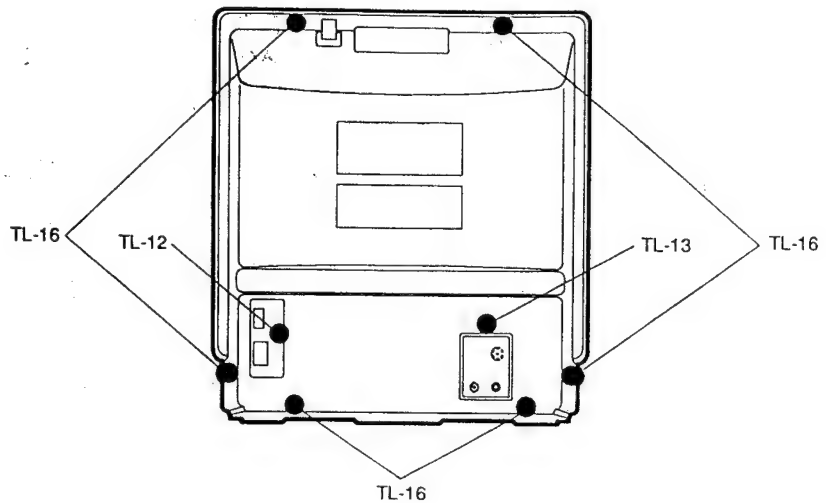


Fig. CAB 1

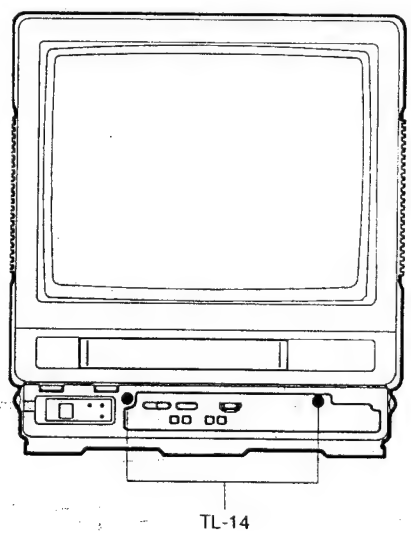


Fig. CAB 2

[1] Rear Cabinet

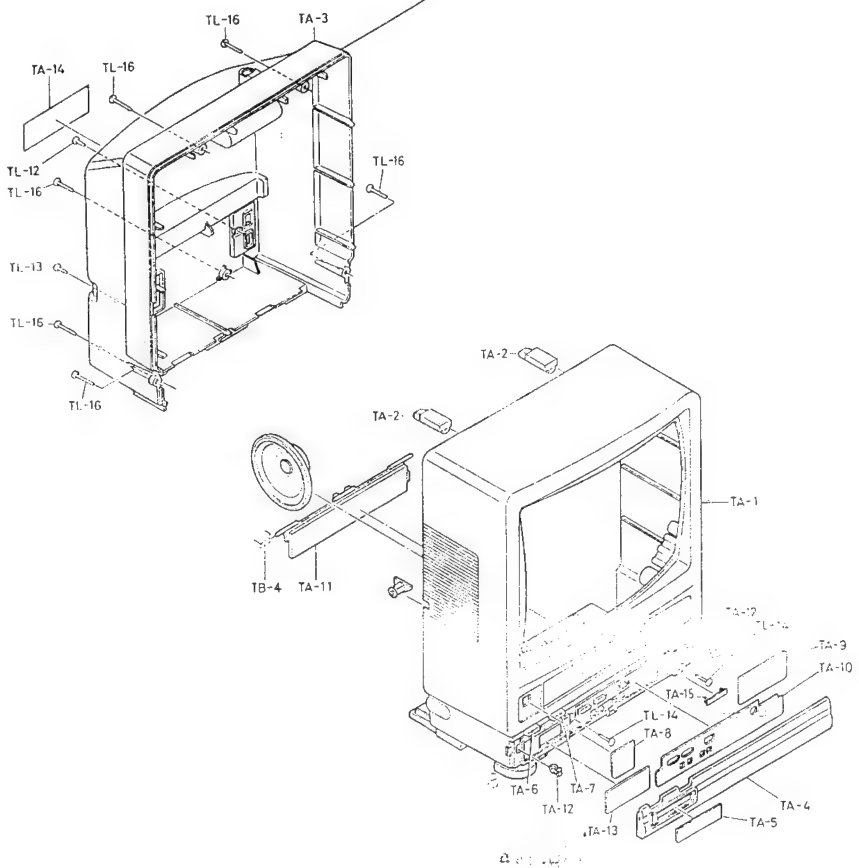


Fig. CAB 3

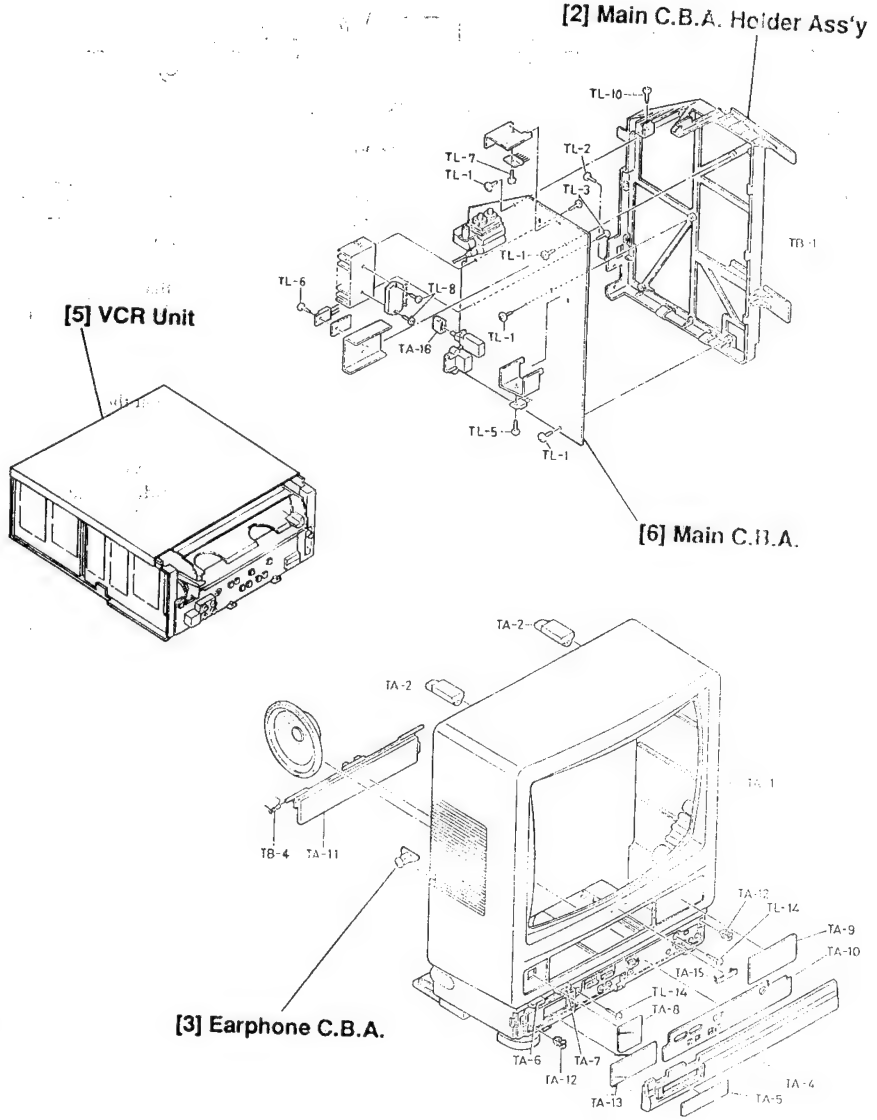


Fig. CAB 4

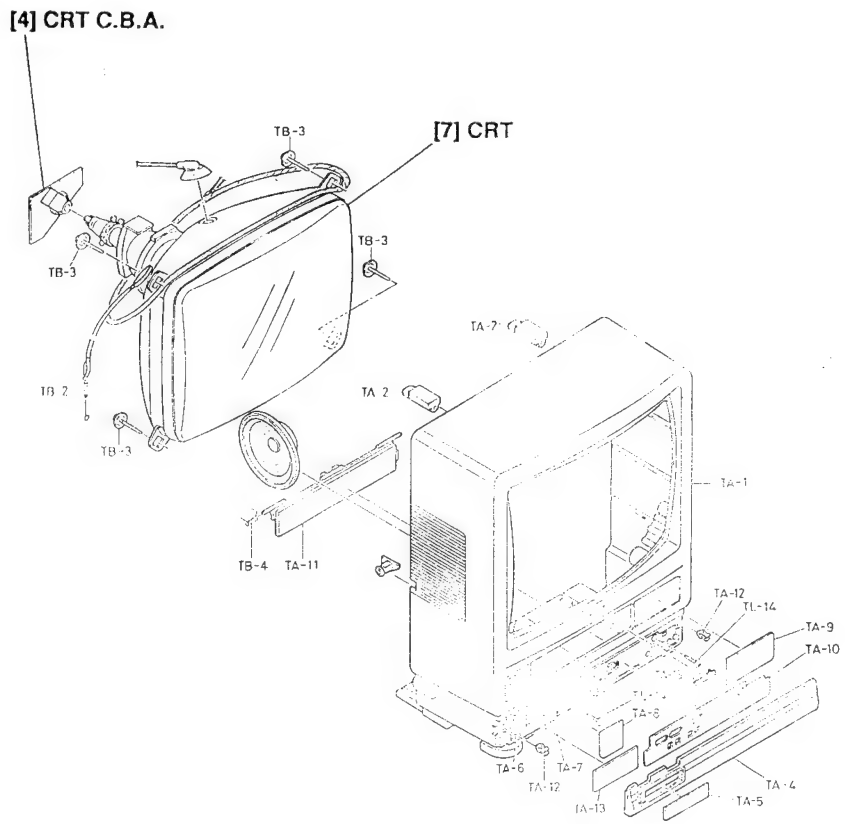
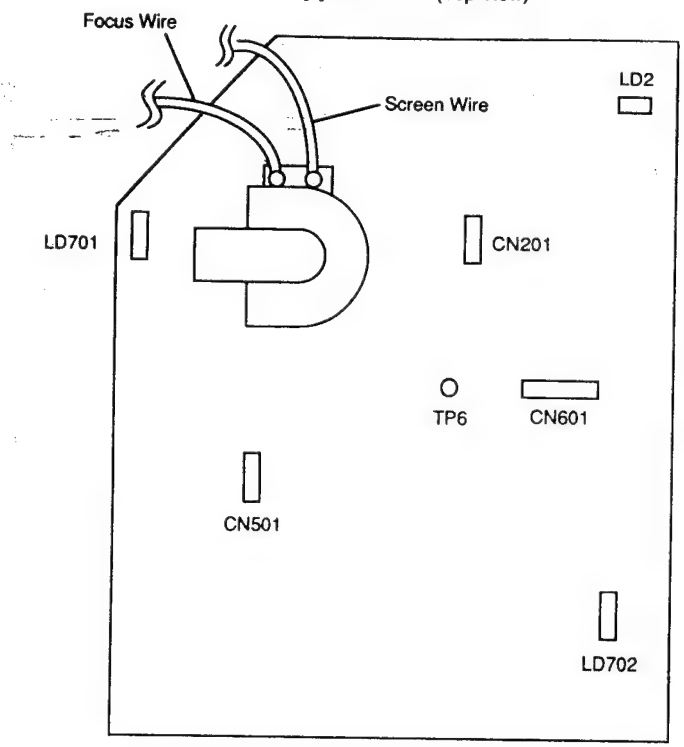


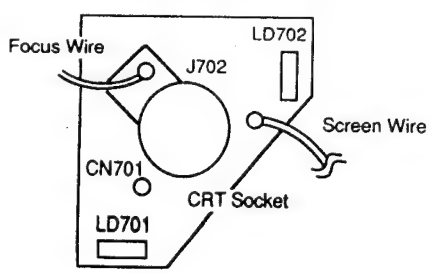
Fig. CAB 5

NOTE: All C.B.A.s are drawn as installed in the cabinet.

[6] Main C.B.A. (Top View)



[4] CRT C.B.A. (Top View)



[3] Earphone C.B.A. (Top View)

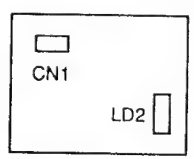


Fig. CAB 6

B6407DC

DISASSEMBLY INSTRUCTIONS [VCR]

DISASSEMBLY FLOW CHART

This flow chart indicates the disassembly steps of the cabinet parts, VCR Unit and the P.C. Boards in order to gain access to item(s) to be serviced. When reassembling, perform the step(s) in the reverse order. Bend, route and dress the cables as they were originally.

Note:

Remove VCR Unit from the Cabinet first.

PART	REMOVAL		
	FIG. NO.	REMOVE/UN-LOCK/RELEA-SE/UNPLUG/UCLAMP/DESOLDER	NOTE
Top Panel	Fig. 1	2(S-1)	1
Head Amp/Audio/ Syscon C.B.A.	Fig. 2 Fig. 3	2(L-1), (CN3501, CN3502, CN3503, CN3504, CL4001, CL4002, CN4003)	2
Deck Ass'y	Fig. 4	3(S-2), (CN2001), (CN6004)	3
Control Ass'y	Fig. 5	6(L-2), (CN5501)	4
Main C.B.A.	Fig. 6	5(L-3), (S-2)	5

Reference <Notes> in Table

1. Remove 2 Screws(S-1).
2. Disconnect the Connectors (CN3501, CN3502, CN3503, CN3504, CN4003), releasing 2 Locking Tabs (L-1). Then disconnect the remaining 2 Connectors (CL4001, CL4002).
3. Remove 3 Screws(S-2). Disconnect the 2 Connectors (CN2001), (CN6004).
4. Release 6 Locking Tabs(L-2). Disconnect the connector (CN5501).
5. Release 5 Locking Tabs(L-3). Remove Screw (S-2).

K2870DC

DISASSEMBLY INSTRUCTIONS [TV]

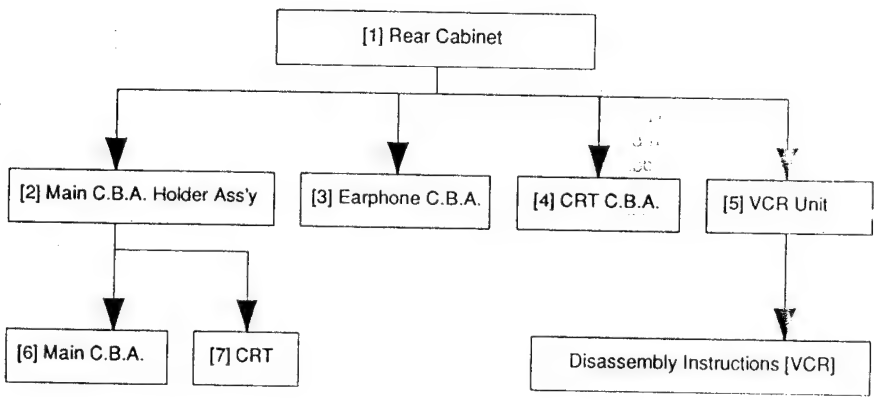
General Note: "C.B.A." is abbreviation for "Printed Circuit Board Assembly".

1. DISASSEMBLY FLOW CHART

This flow chart indicates the disassembly steps of the cabinet parts, VCR Unit and the C.B.A. in order to gain access to item(s) to be serviced. When reassembling, perform the step(s) in the reverse order. Bend, route and dress the cables as they were originally.

Caution !

When removing the CRT, make sure to discharge Anode Lead of the CRT with the CRT Ground Wire before removing the Anode Cap.



2. DISASSEMBLY METHOD

STEP / LOC. NO.	PART	REMOVAL		
		FIG. NO.	REMOVE / ✱UNLOCK / RELEASE / UNPLUG / UNCLAMP / DESOLDER	NOTE
[1]	Rear Cabinet	CAB1 CAB3	6 (TL-16) , (TL-12) , (TL-13)	1
[2]	Main C.B.A. Holder Ass'y	CAB4 CAB6	(CN201) , (CN501) , (CN601) , (LD2) , (LD701) , (LD702) , (TP6) , (Anode Cap) , (Focus Wire) , (Screen Wire)	2
[3]	Earphone C.B.A.	CAB4 CAB6	(CN1) , (LD2)	3
[4]	CRT C.B.A.	CAB5 CAB6	(CN701) , (J702) , (LD701) , (LD702) , (Focus Wire) , (Screen Wire)	4
[5]	VCR Unit	CAB2 CAB4 CAB6	2 (TL-14) , (CN601)	5
[6]	Main C.B.A.	CAB4	4 (TL-1) , (TL-2) , (TL-10)	6
[7]	CRT	CAB5	4 (TB-3)	7

Reference <Notes> in Table

1.
1) Remove 6 screws (TL-16), screw (TL-12) and screw (TL-13) and then slide the Rear Cabinet backward.

2.
1) If not already removed, first remove the Rear Cabinet.
2) Remove all relative wires on the Main C.B.A. (located right side in the cabinet), and remove the Anode Cap, then slide the main C.B.A. Holder Ass'y backward.

Caution !

Discharge Anode Lead of the CRT with the CRT Ground Wire before removing the Anode Cap.

3.
1) If not already removed, first remove the Rear Cabinet.
2) Remove 2 connectors on the Earphone C.B.A., then slide the C.B.A. backward.

Note : When' re-installing, set Earphone jack (EP1) side below.

4.
1) If not already removed, first remove the Rear Cabinet.
2) Remove all relative wires, then pull the CRT C.B.A. backward.

5.
1) If not already removed, first remove the Rear Cabinet.
2) Remove 2 screws (TL-14) inside the Control Door, and remove connector on the Main C.B.A., then slide the VCR Unit backward.

6.
1) If not already removed, first remove the Rear Cabinet.
2) Remove the Main C.B.A. Holder Ass'y.
3) Remove 4 screws (TL-1), screw (TL-2) and screw (TL-10) first, release 6 hooks next, then Main C.B.A. can be removed.

7.
1) If not already removed, first remove the Rear Cabinet and Main C.B.A. Holder Ass'y.
2) Remove 4 screws (TB-3), then the CRT can be removed.

BOTTOM VIEW

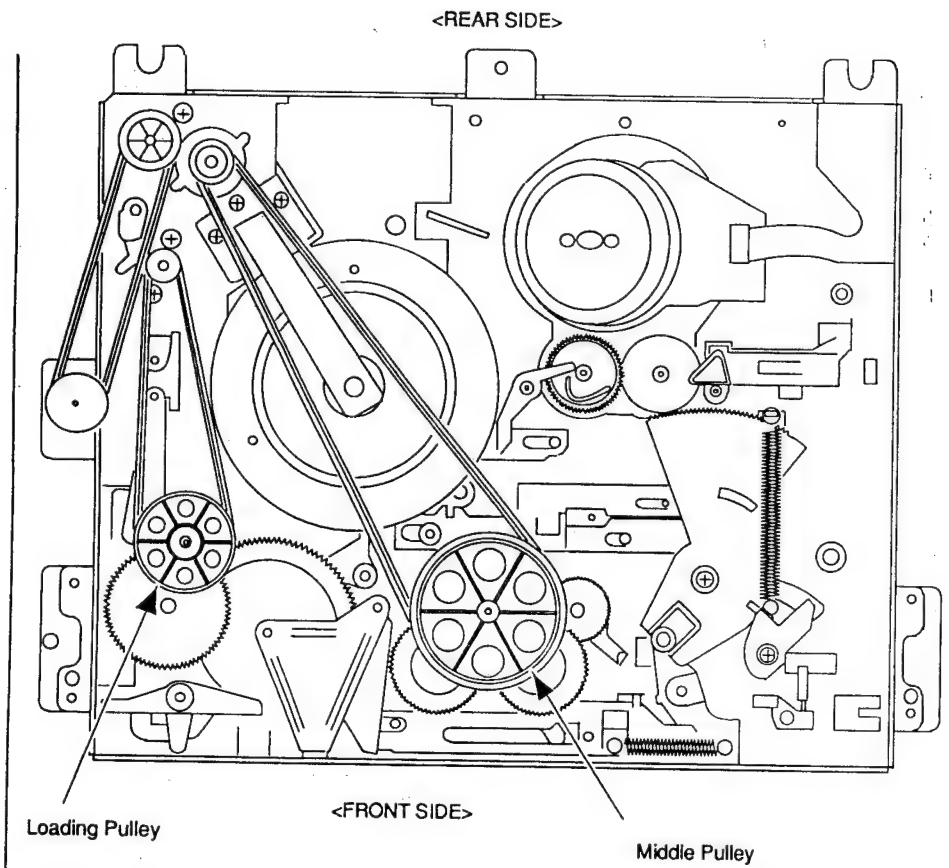


Fig. MA-M2

1. TAPE INTERCHANGEABILITY ADJUSTMENT (FINAL ADJUSTMENT)

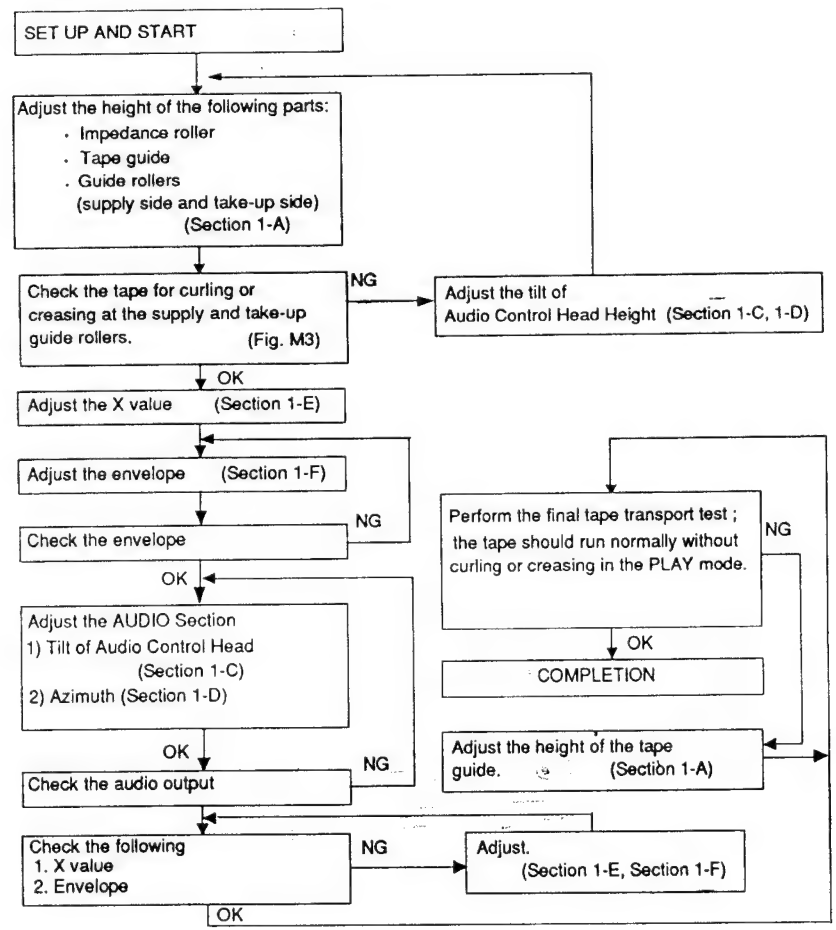
NOTE:

To perform these adjustment procedures, make sure that the Tracking Control is set in the neutral position. (Press the channel up and down bottons of the unit together during PLAY mode.)

Equipment required:

Dual Trace Oscilloscope
Alignment Tape (F6-A, F6-N)
Special Driver Large (FSJ-0001)
Special Driver Small (FSJ-0006)
Mirror (FSJ-0004)
Box Driver, Mx3 (FSJ-0005)

Tape Transport Adjustment Flow Chart



Note: Before attempting these mechanical adjustments, you must complete the ELECTRICAL ALIGNMENT INSTRUCTIONS.

1-A. CONFIRMATION AND ADJUSTMENT OF TAPE RUNNING POSITION

Purpose:

To make sure that the tape running is well stabilized.

Symptom of Misadjustment:

If the tape runs with instability, the tape will be damaged.

1. Play back a cassette tape and confirm that the tape runs without curling or creasing at the guide rollers [2] and [3] and at points A and B on the lead surface. (Refer to Fig. M1 and M2)
2. If curling or creasing is apparent, adjust the height of guide rollers by turning the top of guide rollers [2] and [3] with the Special Driver Small. (Refer to Fig. M1 and M3)
3. Confirm that the tape runs without curling or creasing at the lower flange of Impedance Roller. If curling or creasing is apparent, adjust the height of Impedance Roller in both PLAY and REV modes by turning the Nut M3 with BOX DRIVER M3. (Refer to Fig. M4)

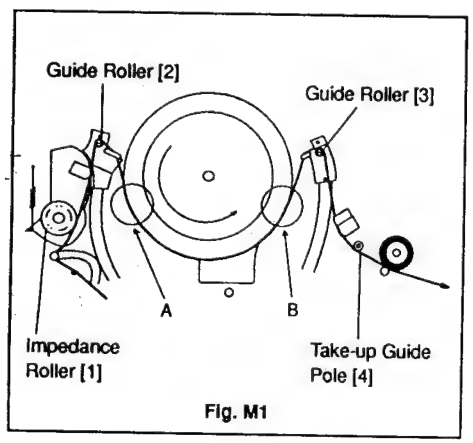


Fig. M1

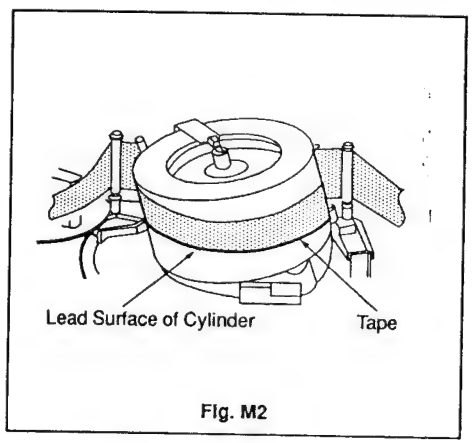


Fig. M2

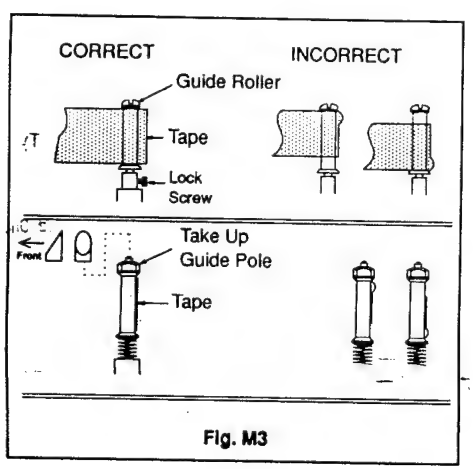


Fig. M3

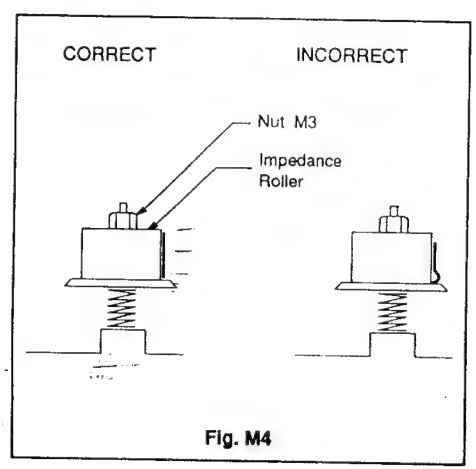


Fig. M4

1-B. CONFIRMATION OF AUDIO CONTROL HEAD HEIGHT

Purpose:

To make sure that the tape runs properly along the Control Head.

Symptom of Misadjustment:

If the control signal is not properly picked up, Servo Operation can not be achieved.

This confirmation is required for a preliminary height adjustment after replacing the Audio control Head. For final adjustments, perform items 1-C and 1-D.

1. Play back a cassette tape. Looking at the lower edge of the Control Head with the tape in motion, ensure that the lower edge of the tape runs 0.15mm above the lower edge of the Control Head. If it doesn't, turn Height Adjustment Nut [A] slightly in either direction as necessary to correct it. Turn clockwise to lower the head and counter clockwise to raise it. (Refer to Fig. M5)

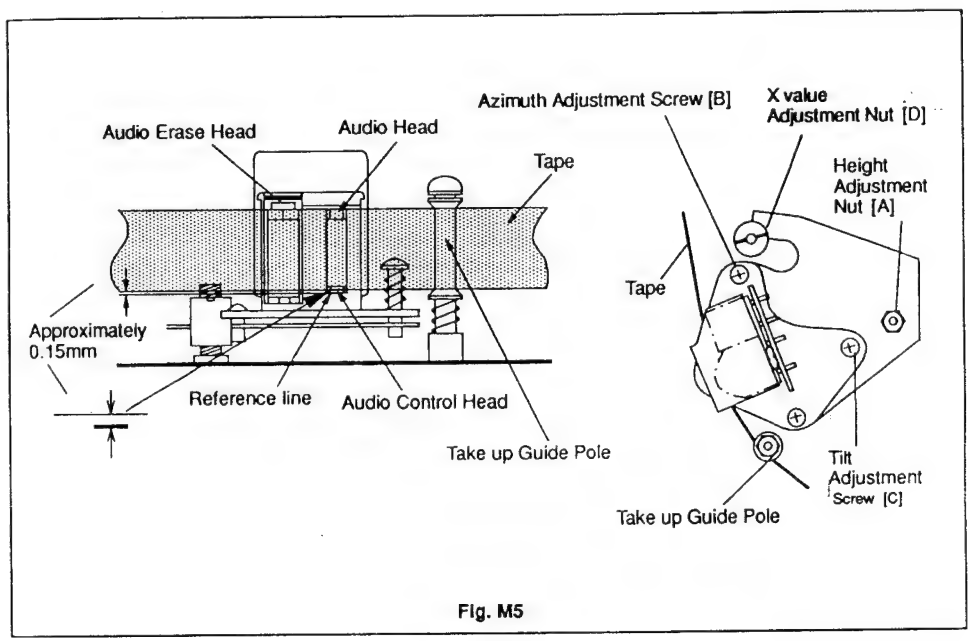


Fig. M5

K2870DMA

1-C. CONFIRMATION OF TILT OF AUDIO CONTROL HEAD

Purpose:

To confirm that the tape running is well stabilized. In particular, confirm that tape properly picks up the Audio Signal at the upper part and Control Signal at the lower part.

Symptom of Misadjustment:

If the tilt of the Audio Control Head is poorly adjusted, the tape will be eventually damaged.

Play back a cassette tape and confirm that the tape running between Take-up Guide Pole [4] in Fig.M1 and Audio Control Head has no slack. If the tape has slack, adjust the Control Head by turning tilt adjustment screw [C] in Fig. M5 so that the tape has no slack.

1-D. HEIGHT ADJUSTMENT OF AUDIO CONTROL HEAD

Purpose:

To adjust the height of Audio Control Head so that it meets the tape tracks properly.

Symptom of Misadjustment

If the position of Audio Control Head is not properly adjusted, the Audio S/N Ratio or Frequency Response will be poor.

1. Connect the oscilloscope to the Audio output on the rear of the set.
2. Confirm that the tape running between the take up guide roller and the audio control erase head has no slack.
   If the tape has slack, take it up by turning the tilt adjustment screw [C]. Then readjust GUIDE ROLLER HEIGHT in section 1-A and the X value in section 1-E.
3. After confirming on the oscilloscope that a 1 kHz audio signal is being output by playing back F6-N test tape, adjust the height adjustment nut [A] so that the AC voltmeter's reading is brought to its maximum level.
4. Adjust the azimuth adjustment screw [B] so that the AC voltmeter's reading is brought to its maximum level.

NOTE: Fix the screw [C] with lock paint after readjustment.

AZIMUTH ADJUSTMENT OF AUDIO CONTROL HEAD

Purpose:

To adjust the height of Audio Control Head so that it meets the tape tracks properly.

Symptom of Misadjustment

If the position of Audio Control Head is not properly adjusted, the Audio S/N Ratio or Frequency Response will be poor.

1. Connect the oscilloscope to the Audio output on the rear of the set.
2. After confirming on the oscilloscope that a 6kHz audio signal is being output by playing back F6-N test tape, adjust the azimuth adjustment screw [B] so that the AC voltmeter's reading or osilloscope waveform is brought to its maximum level.(Refer to Fig. M6)

NOTE: Fix the screw [C] with lock paint after readjustment.

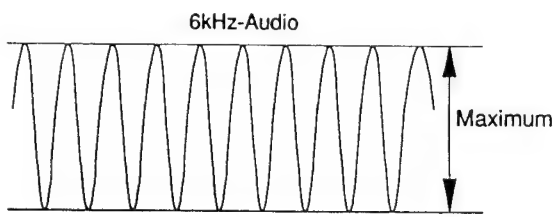


Fig. M6

-E. X VALUE ADJUSTMENT

urpose:

To adjust the horizontal position of the Audio Control Head.

Symptom of Misadjustment:

If the horizontal position of the Audio Control Head is not properly adjusted, maximum envelope cannot be obtained at the neutral position of the Tracking Control.

1. Set tracking control to the neutral position.
2. Connect the oscilloscope to ENV(C-PB) on the Main PCB. Use RF-SW as a trigger.
3. Play back the monoscope portion of the alignment tape (F6-N) and confirm that the PB FM signal appears.
4. Adjust the X Value Adjustment Nut D in Fig. M7 for maximum PB FM signal.

Note: Press the channel up and down bottons of the unit together during PLAY mode to set the tracking control to neutral position.

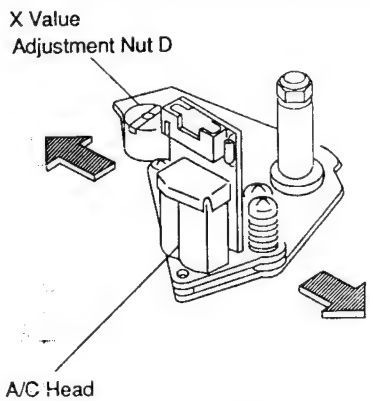


Fig. M7

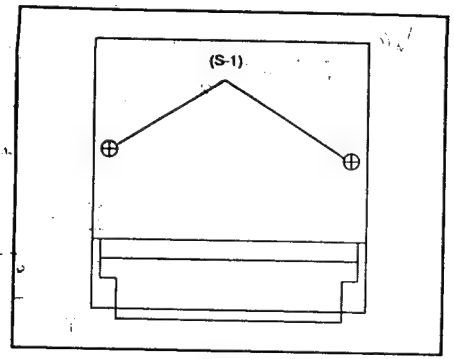


Fig. 1

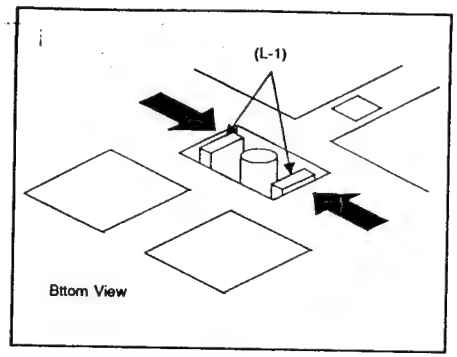


Fig. 2

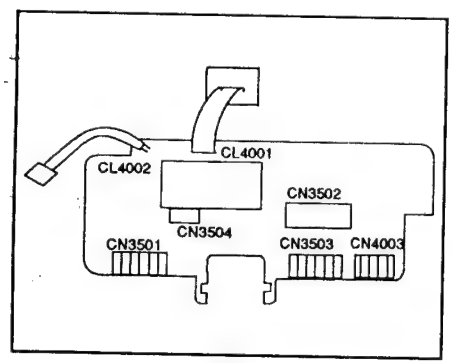


Fig. 3

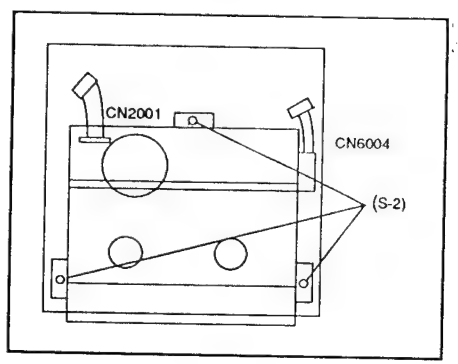


Fig. 4

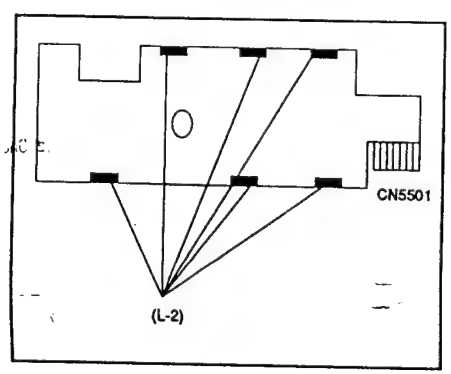


Fig. 5

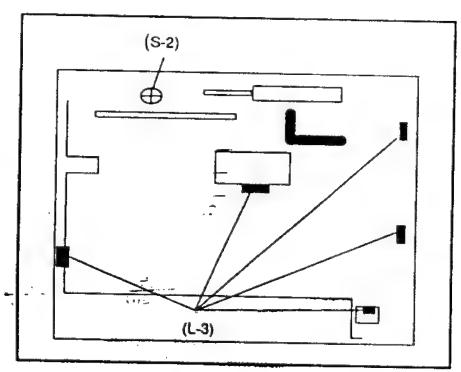


Fig. 6

MECHANICAL ADJUSTMENT PROCEDURES

A. How to set the Mechanism in Tape Loading / Unloading position without Cassette Tape.
To load, turn the Loading Pulley (Fig. MA-M2) Clockwise. To unload, turn the Loading Pulley counterclockwise.

B. How to place the Cassette Holder in the down position without a Cassette Tape.
Use one of the following procedures.

METHOD 1

1. Remove the Top Case and then connect AC Plug.
2. Protect the Start Sensor and End Sensor or LED Sensor by keeping them away from Electrostatic Discharge.
3. Push the Cassette Holder to the Deck Rear Side (in Fig. MA-M1 as shown by the arrow) while pushing the Cassette Lock Plate (L) / (R) (in Fig. MA-M1 as shown by the arrow) to release the lock. The Cassette Holder will move into the down position by itself.

METHOD 2 (MANUAL)

1. Remove the Top Case and Bottom Panel. Then disconnect AC Plug.
2. Turn the Middle Pulley in Fig.MA-M2 clockwise (for down position) while pushing the Cassette Lock Plate (L) / (R) (in Fig. MA-M1 as shown by the arrow) to release the lock. The Cassette Holder may be moved into the down position by turning the Middle Pulley.

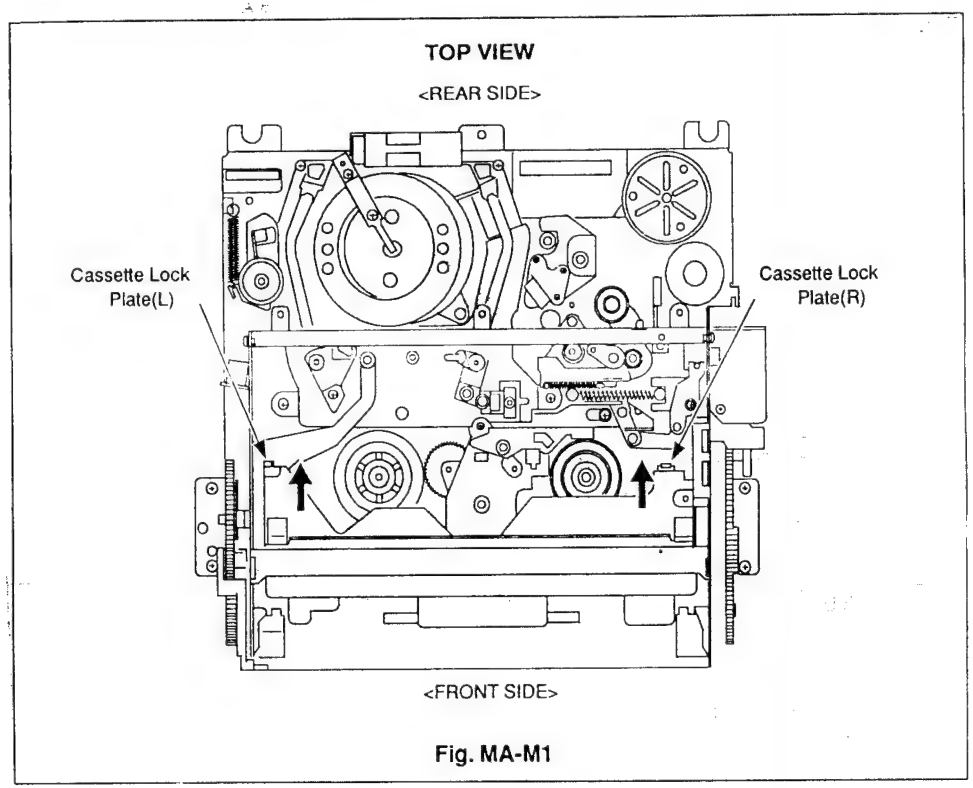


Fig. MA-M1

3. REPLACEMENT OF CYLINDER ASSEMBLY

1. Disconnect the P.C.B Ass'y DM from the stator of DRUM MOTOR.
2. Remove 3 screws (S-3), and then take off the CYLINDER ASSEMBLY.
3. Replace the CYLINDER ASSEMBLY, and tighten 3 screws (S-3).
4. Connect the P.C.B Ass'y DM to the CYLINDER ASSEMBLY. (Refer to Fig. M12)
   Upon completion of above procedure, confirm and adjust the following items:
5. Play back Switching Point. (Refer to Electrical Adjustment.)
6. Azimuth (Refer to Mechanical Adjustment Procedures Item 1-D).
7. Audio Output Level. (Refer to Mechanical Adjustment Procedures Item 1-D).
8. X value. (Refer to Alignment Procedure for Mechanism Item 1-E).
9. Envelope Waveform. (Refer to Mechanical Adjustment Procedures Item 1-F).

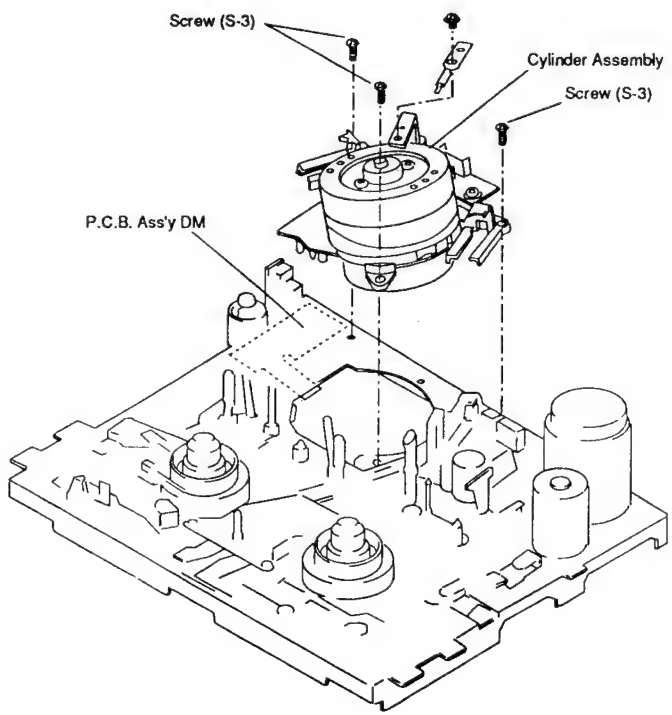


Fig. M12

4.REPLACEMENT OF UPPER DRUM/LOWER DRUM

When reinstalling the Upper, Lower Drums, confirm and adjust the following items:

- Playback switching point (Refer to Electrical Adjustment Instructions).
- Azimuth (Refer to Mechanical Adjustment Procedures Item 1-D).
- Audio output level (Refer to Mechanical Adjustment Procedures Item 1-D).
- X value (Refer to Mechanical Adjustment Procedures Item 1-E).
- Envelope waveform. (Refer to Mechanical Adjustment Procedures Item 1-F).

Note:

Install the Upper Drum so that the Video Head CH-R aligns with the PG Magnet on the side of Drum Motor.

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UPPER DRUM / REINSTALLATION OF UPPER, LOWER DRUMS AND ROTOR

1. *Remove the Front Loading Unit.*
2. Remove screw (A) and take of the Drum Ground Bracket (B).
3. Remove 2 screws (C) and take off the Upper Drum (D).

NOTE:

1. Use gloves and do not touch the drum surface with bare fingers.
2. If the Video Head is defective, replace the upper drum with the Head.

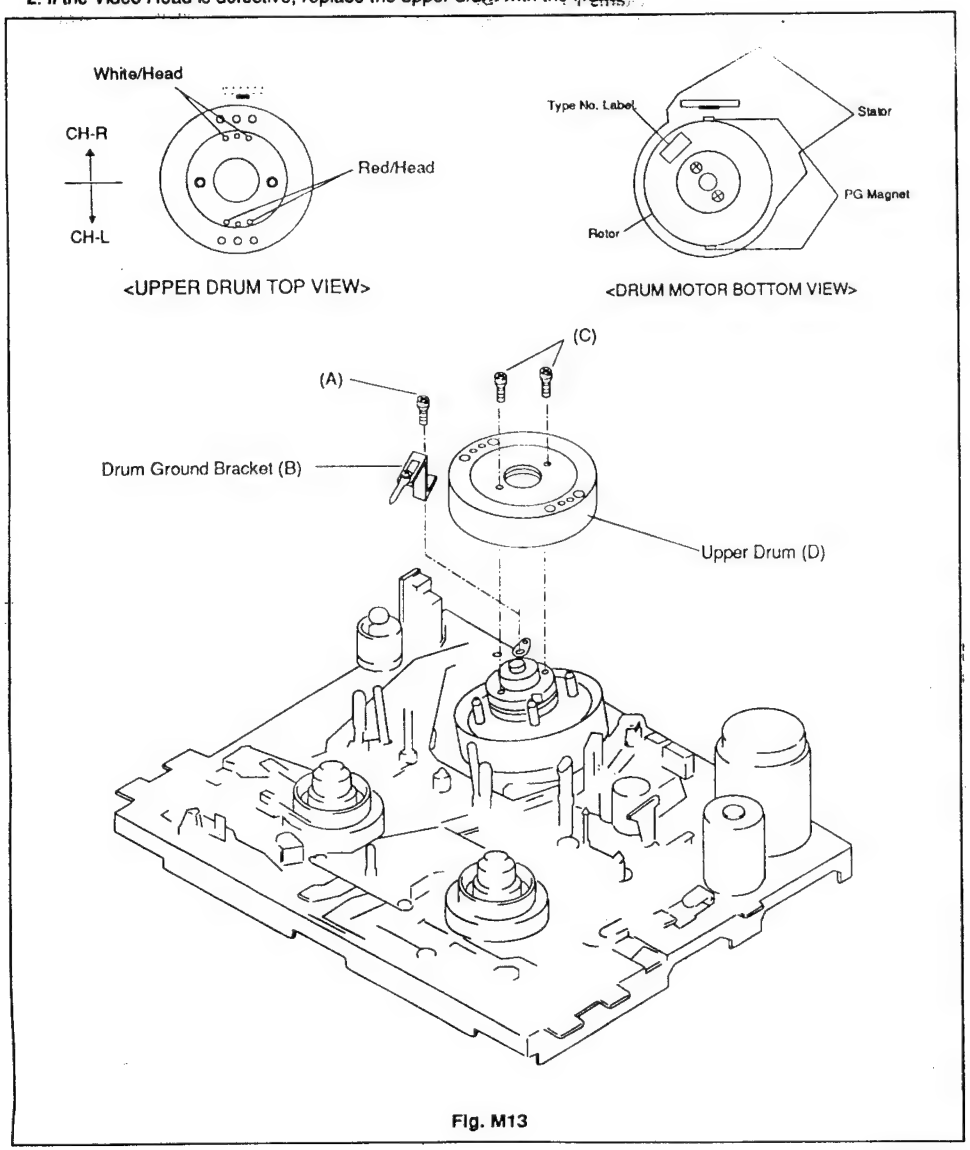

Fig. M13

Note:

Upper Drum (A), Lower Drum (B) and Drum Rotor (C) must be assembled so that the white marks are lined up as shown below. (Fig. M14)

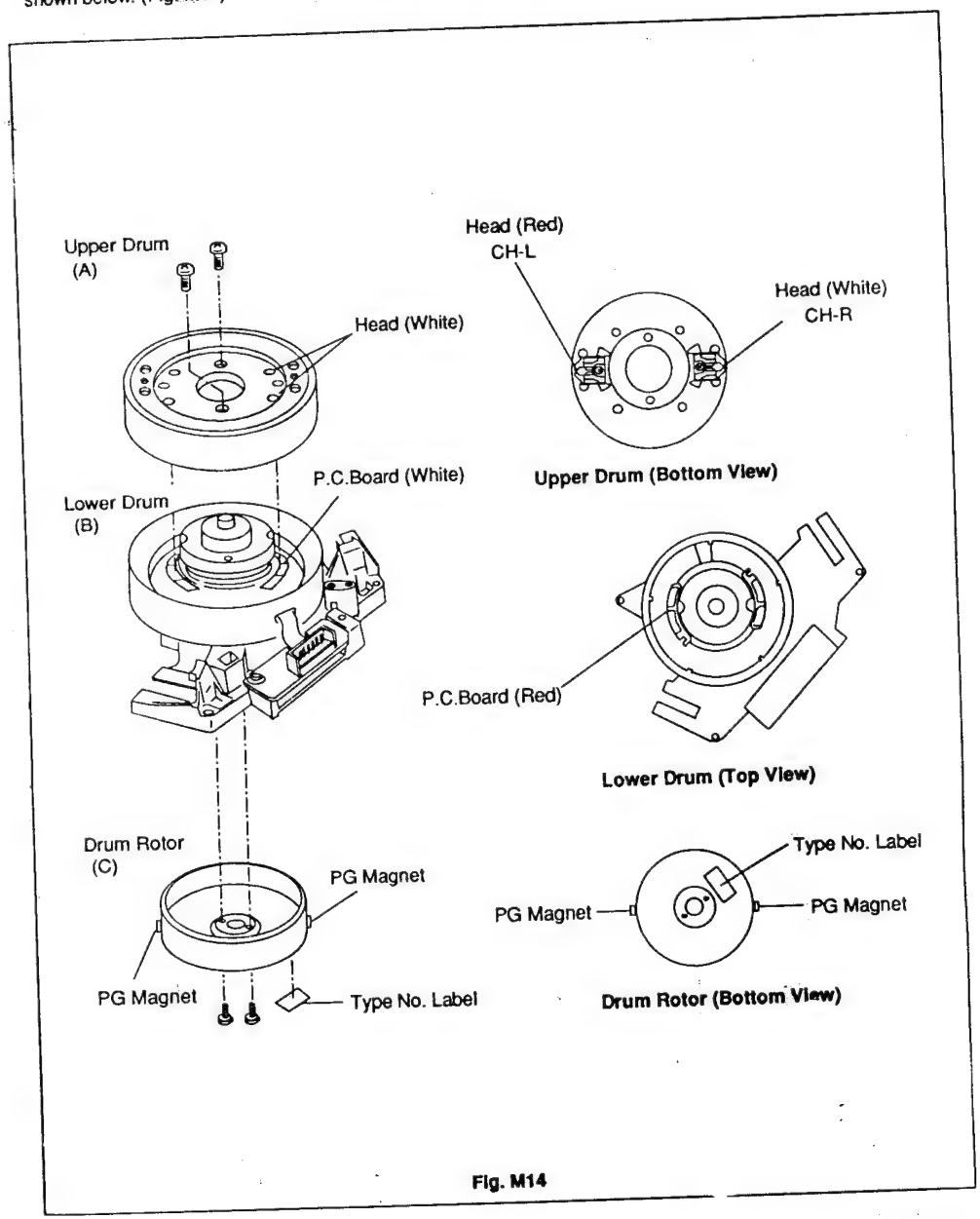

Fig. M14

DISASSEMBLY / ASSEMBLY PROCEDURES OF DECK MECHANISM

This procedure starts with the conditions that the Cabinet parts, Cassette Up Unit and Head Amp C.B.A. have been removed. Also, all the following procedures for adjustment and parts replacement should be performed in STOP mode. When reassembling, perform the step(s) in the reverse order.

STEP / LOC. NO.	START -ING NO.	PART		REMOVAL FIG. NO.	REMOVAL REMOVE / ✱ UNHOOK / UNLOCK / RELEASE / UNPLUG / DESOLDER	INSTALLATION ADJUSTMENT CONDITION
[1]	1	ARM, BACK TENSION	T	DM1 DM3	✱ (P-1), (C-1)	(+) See Setting Condition in Fig. DM3
[2]	1	BAND, BT	T	DM1 DM3	(S-1), (K-1), ✱(P-2)	
[3]	3	SUPPORT, BACK TENSION	T	DM1	(S-2)	----------
[4]	2, 3	SUPPLY REEL ASSEMBLY	T	DM1	----------	(+) ----------
[5]	5	CYLINDER UNIT	T	DM1	3(S-3), Connections	See Replacement of CYLINDER ASSEMBLY.
[6]	5	LOADING POST (L) UNIT	T	DM1	(S-4) Slide to rear to remove	(+) See Alignment Procedure for Mechanism Item 1-A
[7]	5	LOADING POST (R) UNIT	T	DM1	(S-5) Slide to rear to remove	
[8]	8	ROLLER (A), PINCH	T	DM1	(S-6)	----------
[9]	9	HEAD BASE ASSEMBLY	T	DM1 DM4	(N-1), ✱(P-2)	See Confirmation of Audio / Control Head Height
[10]	10	PULLEY ASSEMBLY, MIDDLE	B	DM2	(C-2) DRIVE BELT	----------
[11]	10	REEL DRIVE GEAR ASSEMBLY	T	DM1 DM5	(S-7), 2(S-8)	See Setting Condition in Fig. DM5
[12]	10	GEAR, ASSEMBLY, P	T	DM5	----------	
[13]	10	GEAR ASSEMBLY, RF	T	DM5	----------	
[14]	10,11, 12	ARM ASSEMBLY, T BRACKET	T	DM1 DM6	✱(P-3)	See Setting Condition in Fig. DM6
[15]	10,11, 12,13	ARM ASSEMBLY, S BRACKET	T	DM1 DM6	✱(P-4)	
[16]	16	BRAKE, S SOFT	T	DM1 DM6	✱(P-5), (C-3)	
[17]	10	BRAKE ACTUATOR UNIT	T	DM1 DM7	✱(P-6), ✱(P-7), ✱(P-8)	See Setting Condition Fig. DM7
[18]	10	TAKE-UP REEL ASSEMBLY	T	DM1	----------	(+)
[19]	19	PULLEY, LOADING	B	DM2 DM8	BELT, LOADING (C-4)	----------
[20]	19	GEAR, LOADING	B	DM2 DM8	(C-5)	----------
[21]	21	PLATE, LOADING, LEVER REINFORCE	B	DM2 DM8	2 (S-9)	----------
[22]	19,20	ARM, EJECT ACTUATE	B	DM2 DM8	(C-6)	----------
[23]	19, 21	SPOKE, REC ACTUATE	B	DM2 DM8	✱	----------
[24]	19,20 22	BRAKE, ARM ACTUATE	B	DM2 DM8	----------	----------
[25]	21	LEVER SEMI ASSEMBLY LOADING	B	DM2 DM8	----------	----------
[26]	19, 21	CAM, LOADING	B	DM2 DM8	----------	(+) See Installation procedure for Deck Mechanism in Fig. DM2
[27]	27	PLATE, LOADING GEAR	B	DM2 DM9	(S-10), (K-2) ✱ (P-9)	(+) See Alignment Procedure for Mechanism in Fig. DM2 See Setting Condition in Fig. DM9
[28]	28	DRUM MOTOR TM-84	B	DM2	2(S-11), 3(S-12) *DISCONECT MYLAR CABLE	See Replacement of DRUM MOTOR TM-84.

① ② ③ ④ ⑤ ⑥ ⑦

Note:

①: Order of steps in Procedure
When reassembling, perform the step (s) in the reverse order.
These numbers are also used as the identification (location) number of parts in Figures.

②: Start No. followed by corresponding part to be removed at this stage
See example below.
Example : Cassette Load Bracket Assembly can be removed without removing any other parts, but Worm Wheel Assembly can be removed only after removing Cassette Load Bracket Assembly (No. ①.)

③: Part to be removed or installed

④: Location of part
T = TOP VIEW (Fig. DM1) B = BOTTOM VIEW (Fig. DM2)

⑤: Fig. No. showing Procedure or Part Location

⑥: Identification of part to be removed, unhooked, unlocked, released, unplugged, unclamped or desoldered
P = Spring W = Washer C = Cut Washer R = Retaining Ring
N = Nut S = Screw ✱ = Unhook, unlock, release, unplug or desolder
2 (C-2) = 2 Cut Washers (C-2)

⑦: Adjustment information for installation
(+) : Refer to Exploded Views for Lubrication information.

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1-F. CONFIRMATION / ADJUSTMENT OF ENVELOPE WAVEFORM

Purpose:

To achieve a satisfactory picture and secure precise tracking.

Symptom of Misadjustment:

If the envelope output is poor, much noise will appear in the picture. The tracking will lose precision and the playback picture will be distorted by any slight variation of the tracking control.

1. Set tracking control to the neutral position.
   (Press the channel up and down bottons of the unit together during PLAY mode.)
2. Connect the oscilloscope to ENV(C-PB) on the Main PCB. Use RF-SW as a trigger.
3. Play back the monoscope portion of the alignment tape (F6-N) and adjust the height of guide rollers [2] and [3], watching the scope display so that the envelope becomes as flat as possible.
   If adjustment is required, turn top of guide roller with the Post Adjustment Screwdriver.
4. When the scope display is as shown in Fig. M8, adjust the height of [2] so that the waveform looks like Fig. M10.
5. When the scope display is as shown in Fig. M9, adjust the height of [3] so that the waveform looks like Fig. M10.
6. When [2] and [3] are adjusted properly, there is no Envelope Drop at the beginning and end of track as shown in Fig. M10.

NOTE:

After adjustment, confirm the X VALUE by pushing the Tracking Control Up or Down Buttons alternately, to check the symmetry of the envelope. If required, perform "X VALUE ADJUSTMENT".

Dropping envelope level at the beginning of track

Fig. M8

Dropping envelope level at the end of track

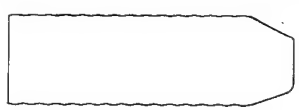

Fig. M9

Envelope is adjusted properly (No Envelope Drop)

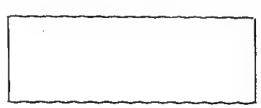

Fig. M10

2. REPLACEMENT OF DRUM MOTOR

1. Disconnect the P.C.B Assembly DM from the stator of Drum Motor.
2. Remove 2 screws (S-11), and then take off the rotor of Drum Motor.
3. Remove 3 screws (S-12), and then take off the stator of Drum Motor.
4. Replace the stator of Drum Motor, and then tighten 3 screws (S-12).
5. Replace the rotor of Drum Motor, and then tighten 2 screws (S-11).
6. Connect the P.C.B Assembly DM to the stator of Drum Motor. (Refer to Fig. M11)
   Upon completion of above procedure, confirm and adjust the following items.
7. Play back Switching Point. (Refer to Electrical Adjustment)
8. X value. (Refer to MECHANICAL ADJUSTMENT PROCEDURES Item 1-E)

Note:

Install the rotor of Drum Motor so that the PG Magnet on the side of Drum Motor Type No. Label (TM-84) aligns with the Video Head CH-R. (Refer to Fig. M11)

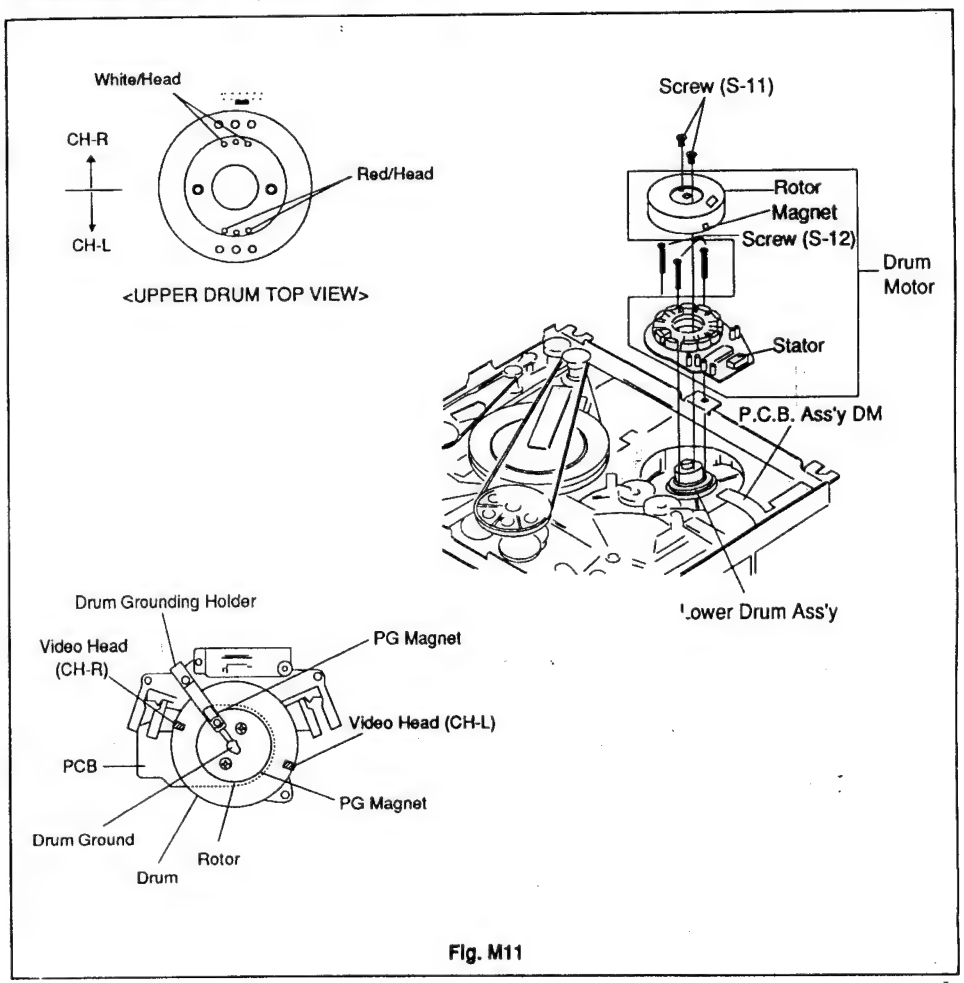

Fig. M11

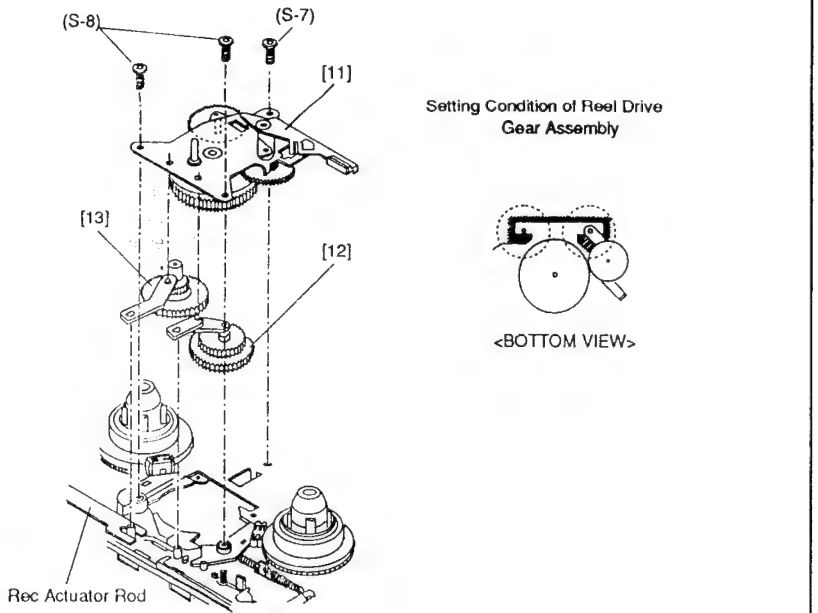

Fig. DM5

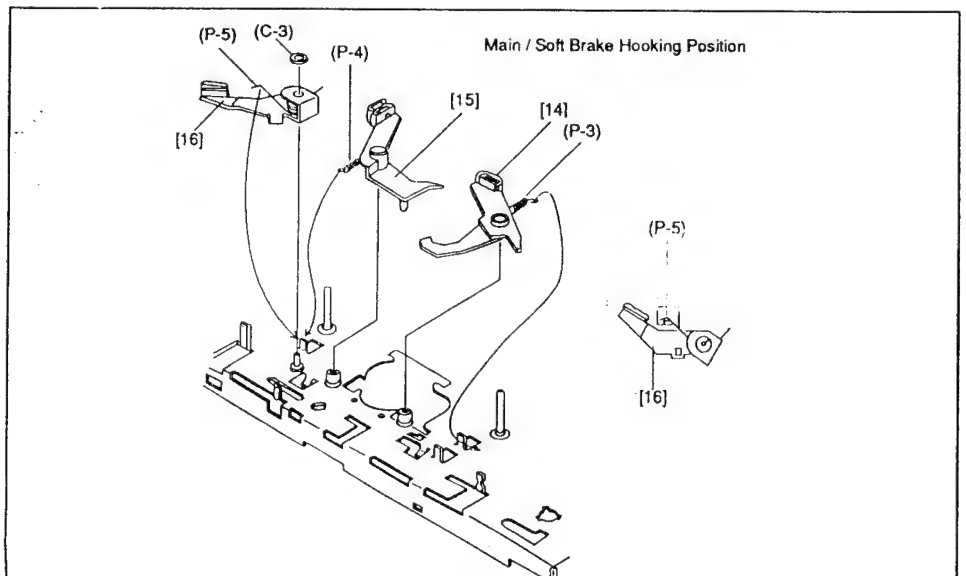

Fig. DM6

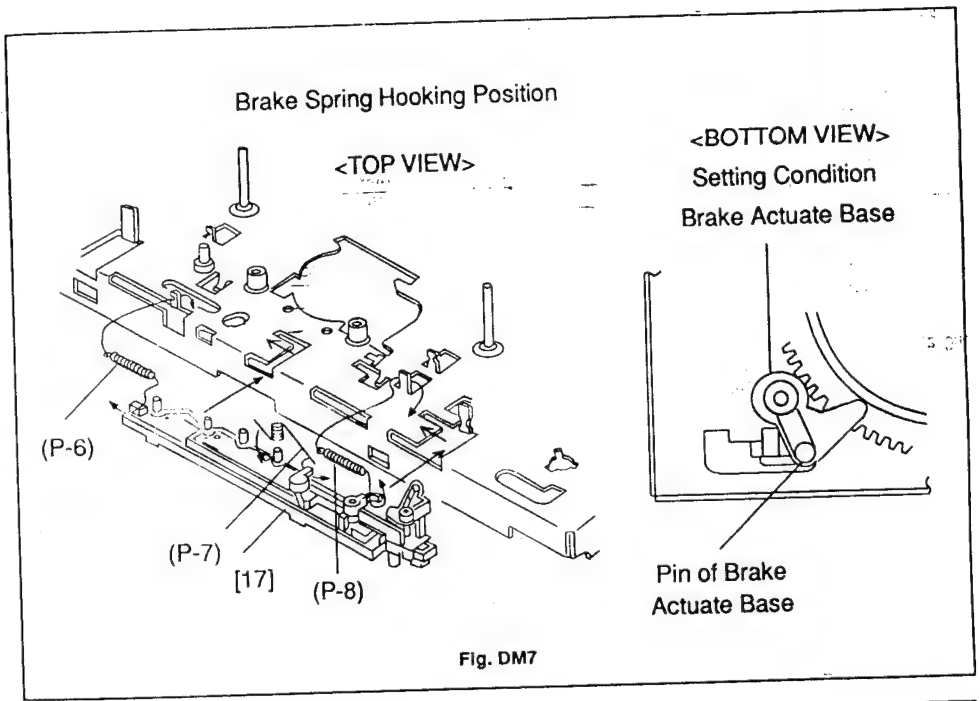

Fig. DM7

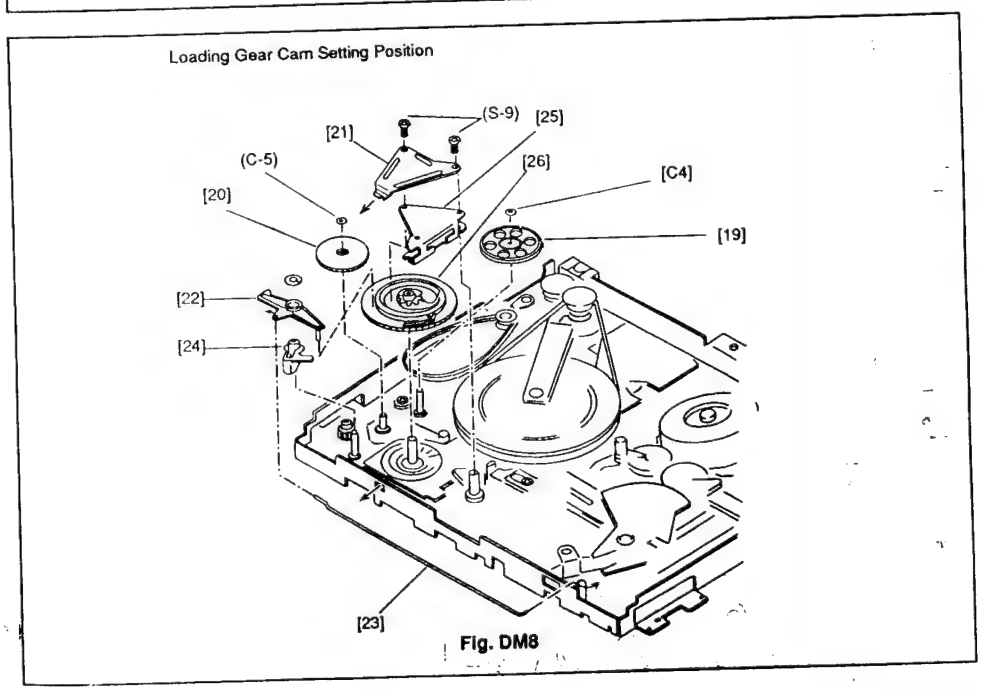

Fig. DM8

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Loading Gear Plate Setting Position

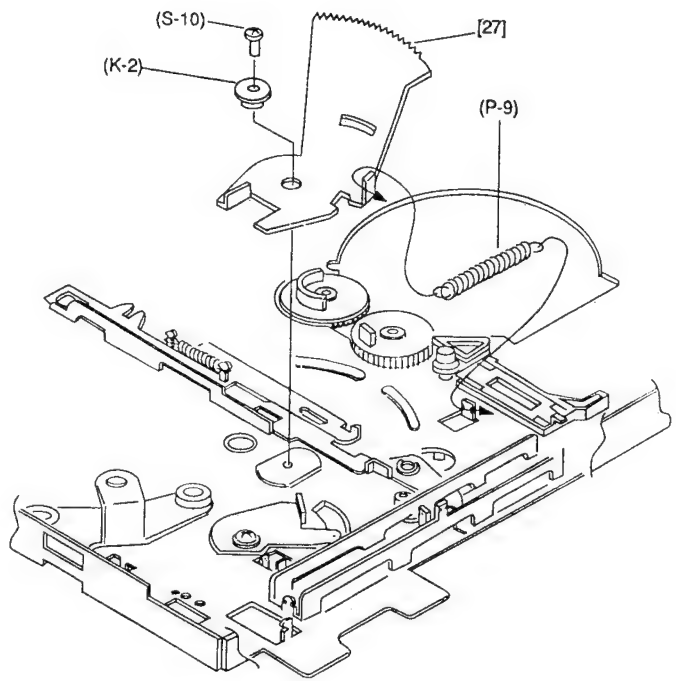
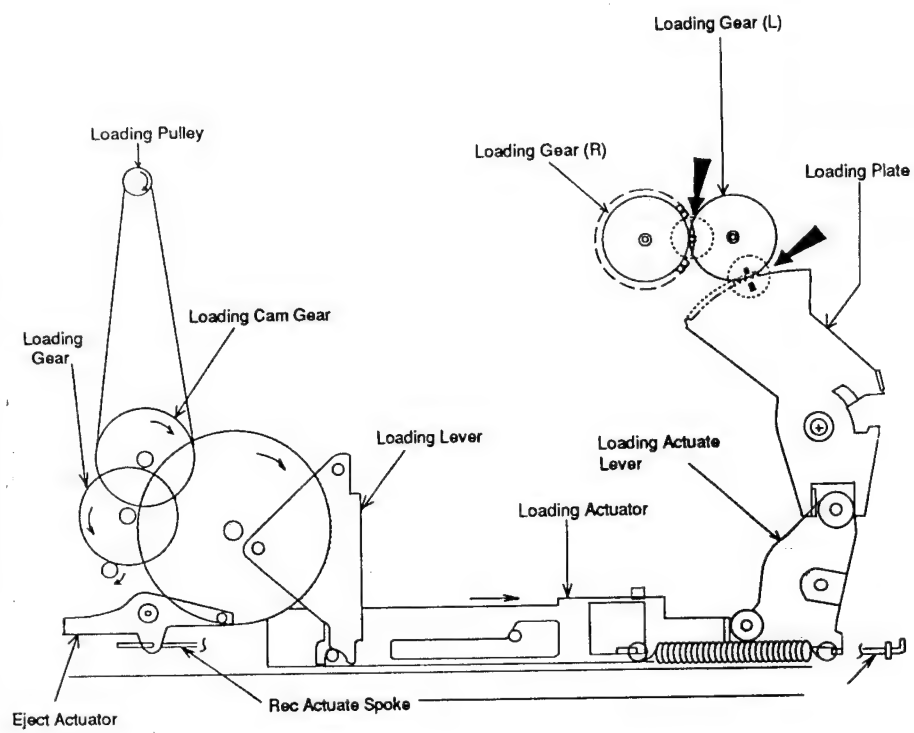


Fig. DM9

ALIGNMENT PROCEDURES OF MECHANISM

The mechanism of this model is mostly engaged to the System Control Circuit, through the mode select switch (Loading Cam). Therefore the relation between the mode select switch (Loading Cam) and the other gear determines all further mechanical movement of the mechanical parts such as levers, gears, pulley and so on. For specific removal and installation procedures, refer to the Disassembly / Assembly Procedures. If these parts are not properly aligned, the unit will be unloaded or stopped. It may result in damage to the mechanical or electrical parts. The overall mechanical condition of the bottom views is shown in Fig. A1.

Adjustment Stop Mode



Bottom View of Overall Mechanical Condition

Fig. A1

ASSEMBLY PROCEDURES OF LOADING CAM AND LOADING LEVER

1) Push the P Cam Lever in the direction of the arrow. (In the opposite direction of Loading Cam Gear)
2) Turn the Cam rising portion on Loading Cam Gear in the direction of Shaft (A), then install Loading Cam Gear onto Shaft (B).
3) Install Loading Lever onto Shafts (C) and (D), then turn Loading Cam Gear clockwise or counterclockwise so that the Roller on the Loading Lever aligns with the groove on Loading Cam as shown in Fig. A2.

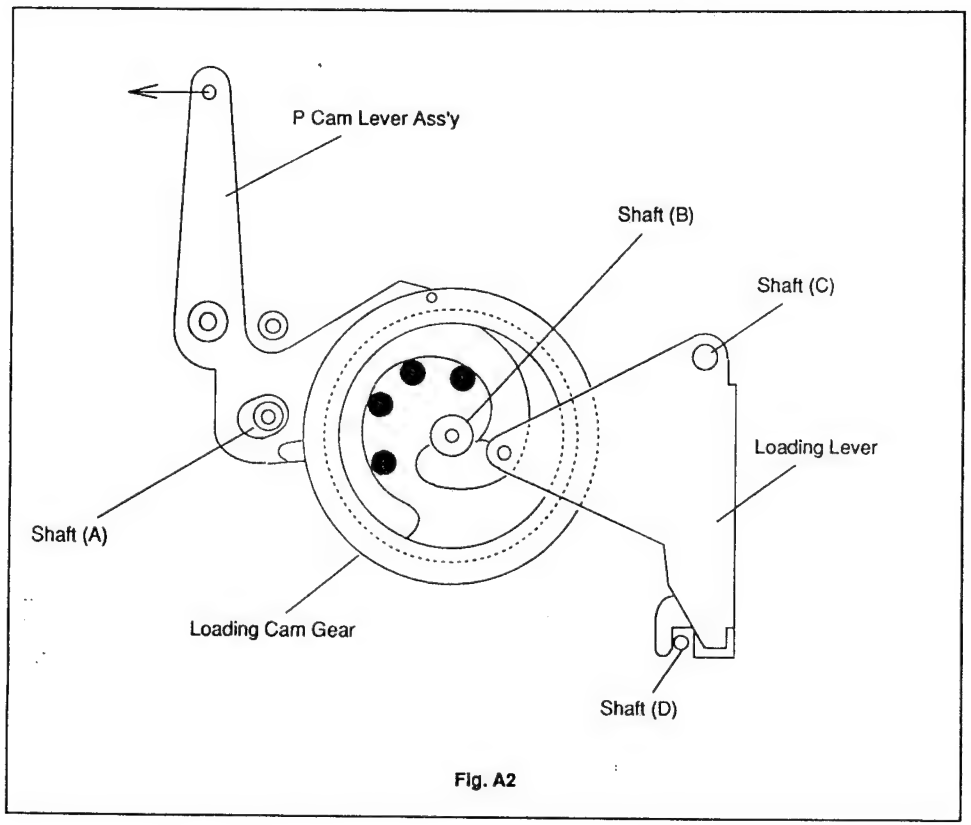


Fig. A2

ALIGNMENT PROCEDURES OF LOADING GEAR PLATE

1) Projection on the Tape Loading Gear (R) aligns with the indentation on the Tape Loading Gear (L) as shown in Fig. A1.
2) Install the Loading Gear so that the indentation on the Loading Gear Plate aligns with the indentation on the Tape Loading Gear (L) the condition (per Item 1) above as shown in Fig. A1.

DISASSEMBLY / ASSEMBLY AND ADJUSTMENT OF CASSETTE UP UNIT

Notes on Installation:
This procedure assumes that you have removed the Cassette Up Unit from chassis. When reassembling, perform the step(s) in the reverse order.

STEP NO.	START NO.	PART		REMOVAL FIG. NO.	REMOVAL REMOVE / *UNHOOK / UNLOCK / DESOLDER	INSTALLATION ADJUSTMENT CONDITION
[1]	1	BRACKET ASSEMBLY, CASSETTE LOAD	R	DA1	(S-1), DESOLDER WIRES	See Setting Condition in Fig. DA1
[2]	1	WORM WHEEL ASSEMBLY	R	DA2	(R-1)	(+) See Alignment Procedure of Cassette Up Unit in Fig. MA15-1 and Fig. DA4
[3]	2	GEAR(R)ASSEMBLY, LIFT	R	DA2	(R-2)	
[4]	3	GEAR(A), SYNCHRONIZE	R	DA2	(R-3)	
[5]	5	LEVER, LIFT	L	DA3	(P-1),(L-1)	See Setting Condition in Fig. DA3
[6]	5	GEAR(L) ASSEMBLY, LIFT	L	DA6	(R-4)	See Alignment Procedure of Cassette Up Unit in Fig. MA15-2 and Fig. DA6
[7]	6	GEAR(A), SYNCHRONIZE	L	DA6	(R-5)	

① ② ③ ④ ⑤ ⑥ ⑦

Note:

①: Order of steps in Procedure
When reassembling, perform the step (s) in the reverse order.
These numbers are also used as the identification (location) No. of parts in Figures.

②: Start No. followed by corresponding part to be removed at this stage
See example below.
Example : Cassette Load Bracket Assembly can be removed without removing any other parts, but Worm Wheel Assembly can be removed only after removing Cassette Load Bracket Assembly (No. ①.)

③: Part to be removed or installed

④: Location of part
R = Right L = Left

⑤: Fig. No. showing Procedure or Part Location

⑥: Identification of part to be removed, unhooked, unlocked, released, unplugged, unclamped or desoldered
P = Spring W = Washer
C = Cut Washer R = Retaining Ring
N = Nut S = Screw
* = Unhook, unlock, release, unplug or desolder
2 (C-2) = 2 Cut Washers (C-2)

⑦: Adjustment information for installation
(+) : Refer to Exploded Views for Lubrication information.

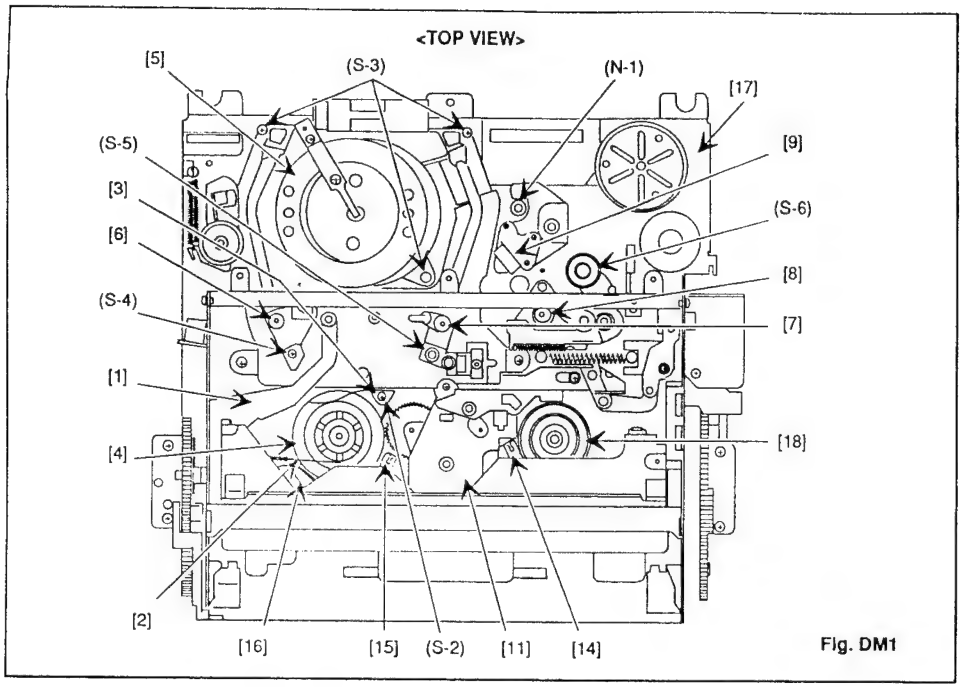


Fig. DM1

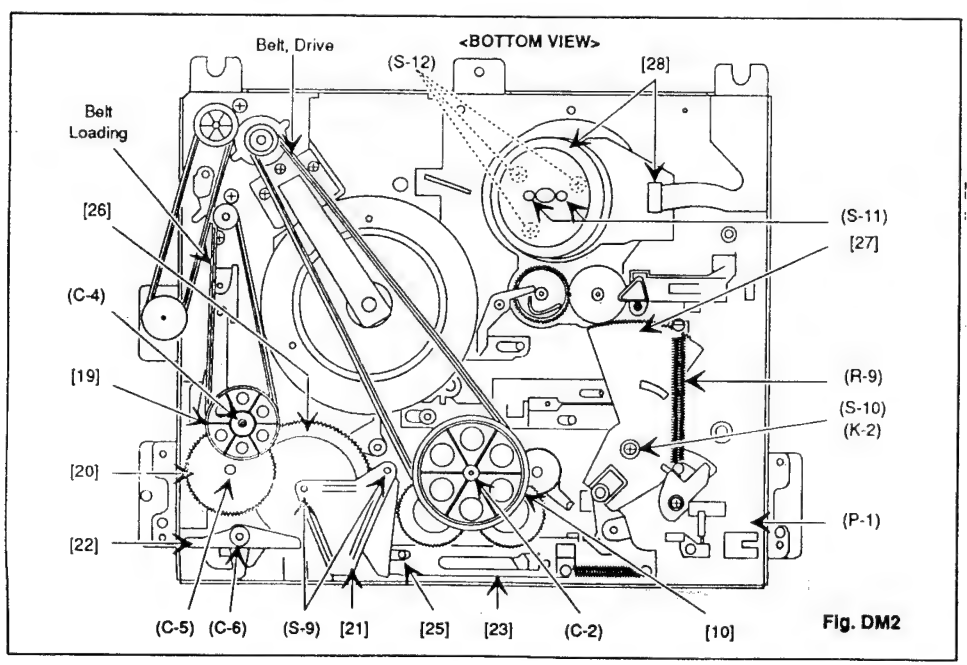


Fig. DM2

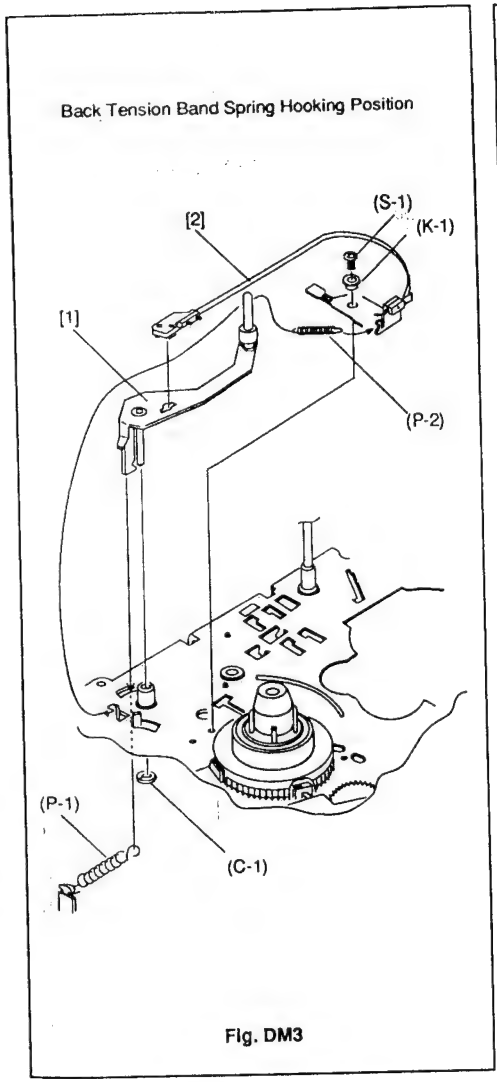


Fig. DM3

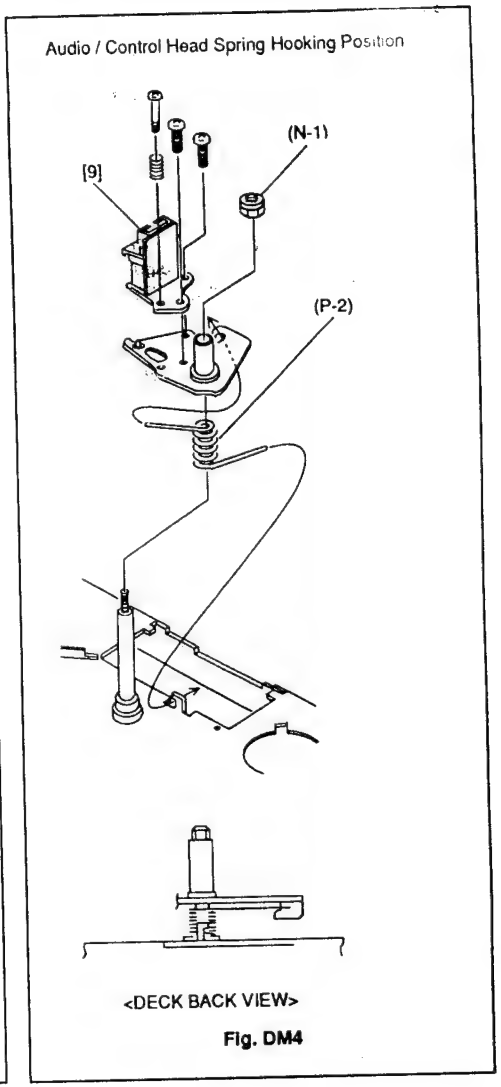


Fig. DM4

CONFIRMATION AND ADJUSTMENT

- PLAYBACK SWITCHING POINT
- X VALUE
- ENVELOPE WAVEFORM
- AUDIO OUTPUT LEVEL
- AZIMUTH
- TAPE TRANSPORTATION

Install the Gear Holder Ass'y so that the pin of Gear Holder Ass'y meets with the hole on the Return Arm.

K6190DA

Setting Condition

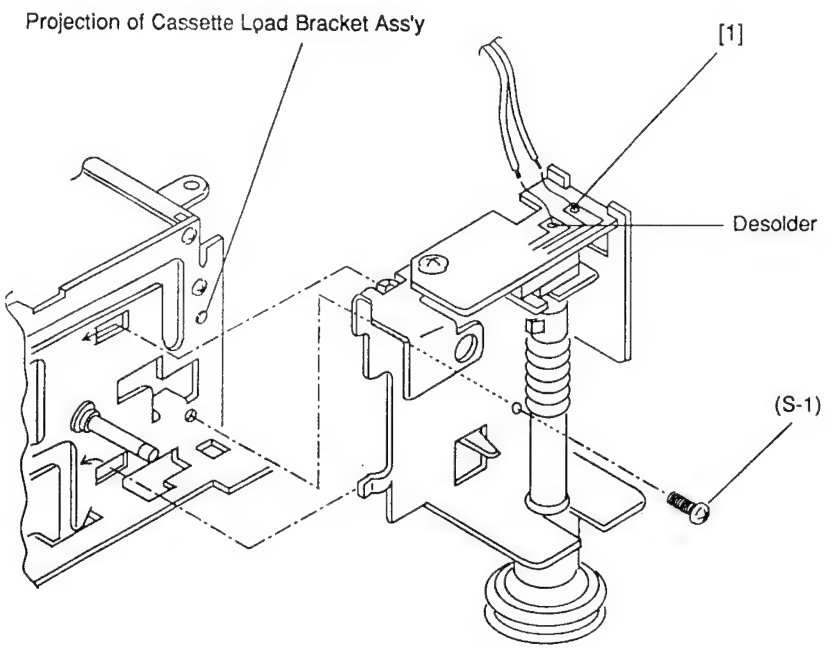


Fig. DA1

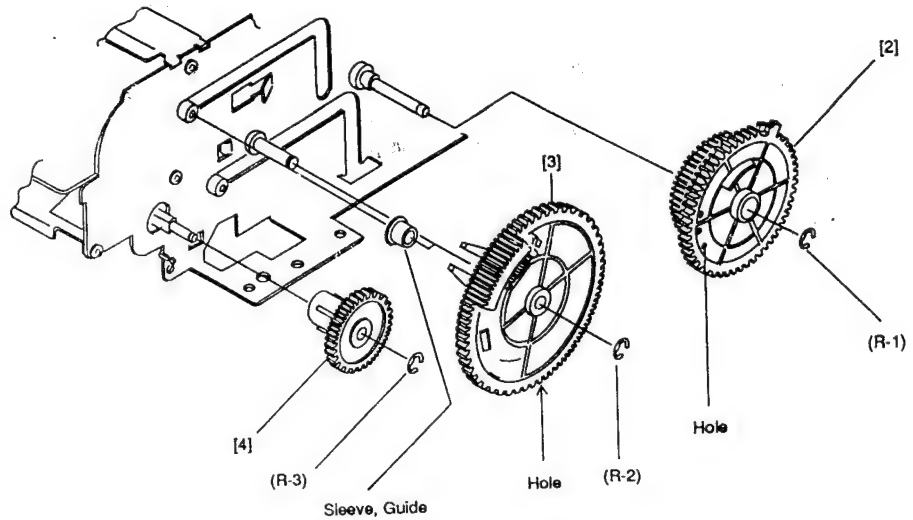
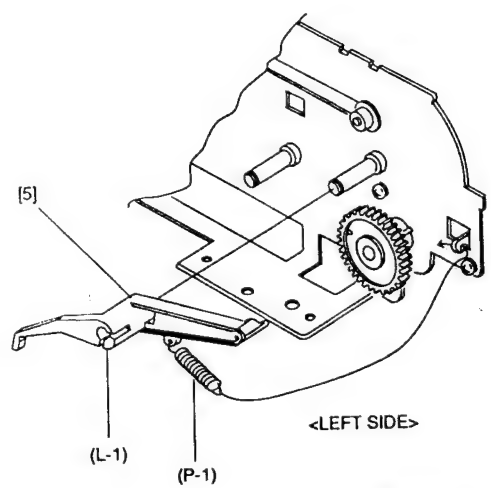


Fig. DA2

Lift Lever Spring Hooking Condition



Lift Lever Hooking Condition

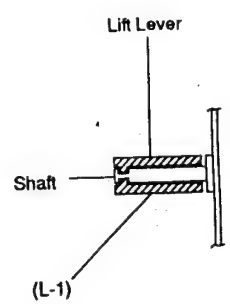


Fig. DA3

LOADING BLOCK (L) ASSEMBLY REMOVAL

1) Remove the Cup screw.
2) Then remove Loading Block (L) Assembly.

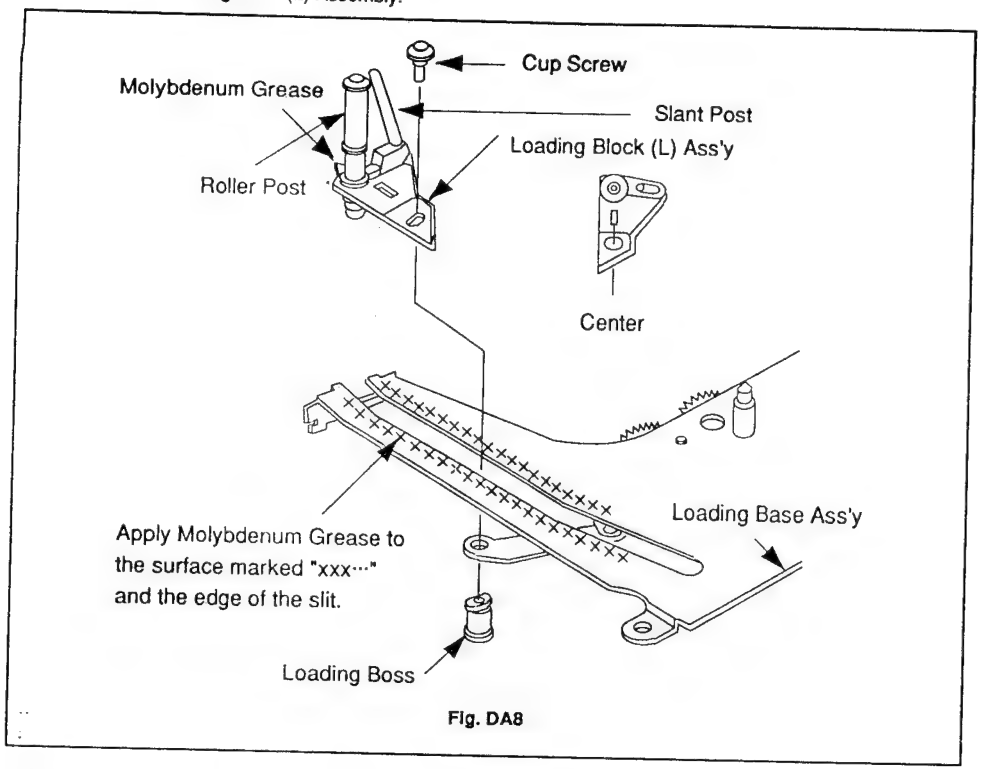
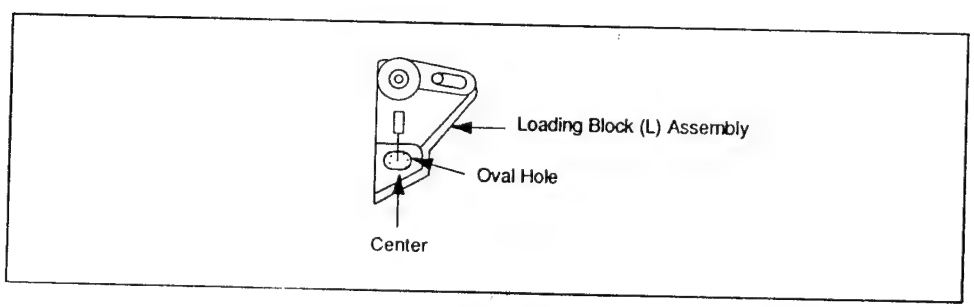


Fig. DA8

Note:
Do not stain Roller Post and Slant Post with grease.



Note:
When reassembling, position the loading boss in the center of the Oval Hole of Loading Block (L) Ass'y.

LOADING BLOCK (R) ASSEMBLY REMOVAL

1) Remove the cup screw.
2) Then remove Loading Block (R) Assembly.

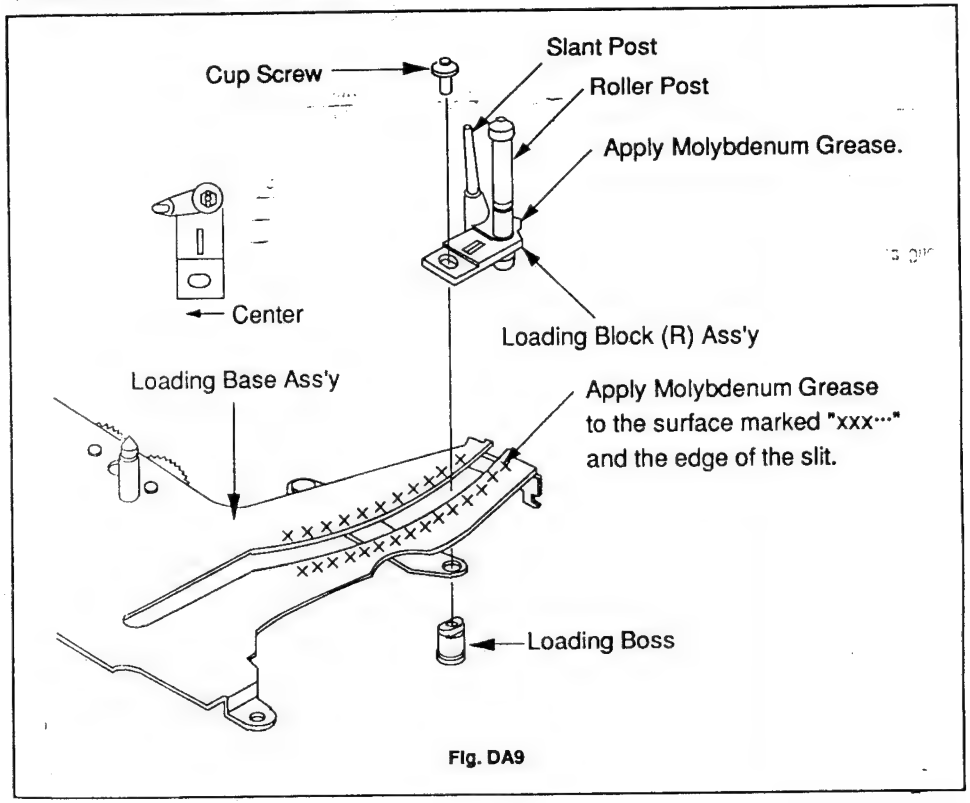
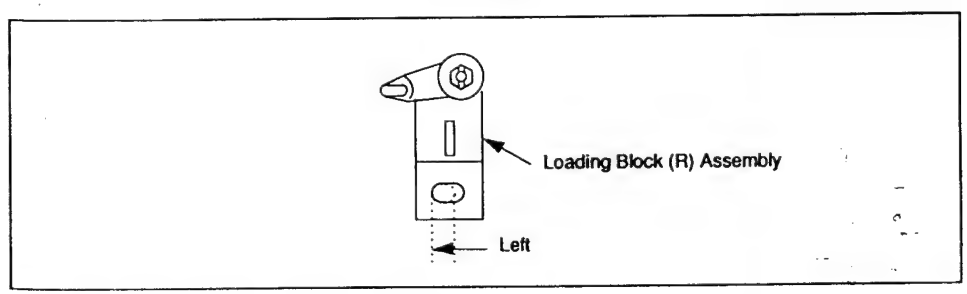


Fig. DA9



Note:
Do not stain Roller Post and Slant Post with grease.
Note:
When reassembling, position the Loading boss to the extreme left end of the Oval Hole of the Loading Block (R) Assembly.

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LIFT GEAR (L) ASSEMBLY

Assembly Procedure of Lift Gear (L) Assembly and Synchronize Gear.

1. Pull the Cassette Holder Assembly toward the front until it stops.
2. Install the Lift Gear (L) Assembly so that the indentation of the Lift Gear (L) Assembly aligns with the projection on the Synchronize Gear.

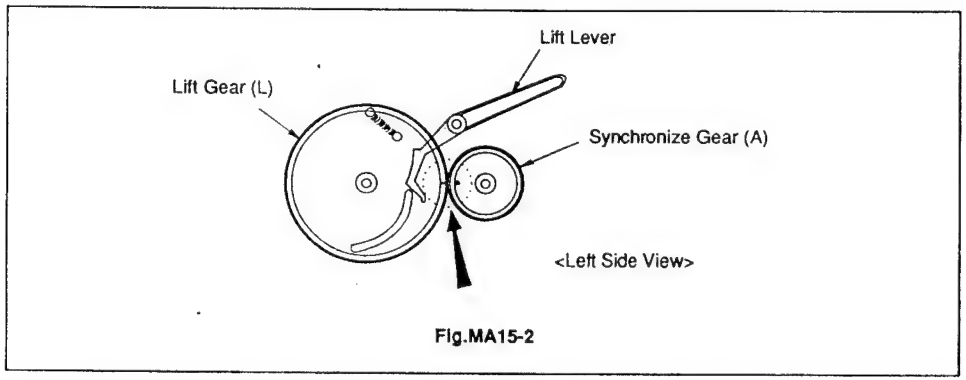

Fig.MA15-2

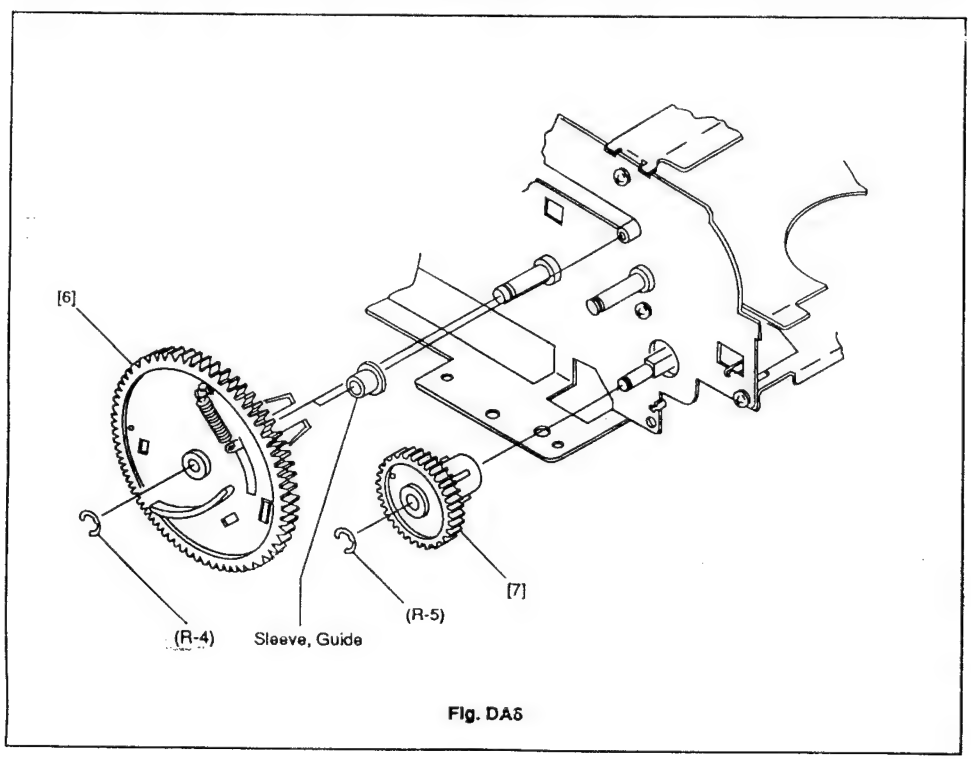

Fig. DA8

ALIGNMENT PROCEDURES OF LOADING GEAR PLATE

1) Align the protrusion of the Loading Gear (R) with the indentation of the Loading Gear (L) as shown in Fig. A1 in "ALIGNMENT PROCEDURE OF MECHANISM".
2) Install the Loading Gears (R) and (L) so that the indentation of the Loading Plate aligns with the indentation of the Loading Gear (L) with Item 1 condition, as shown in Fig. A1 in "ALIGNMENT PROCEDURE OF MECHANISM".

LOADING PLATE REMOVAL

1) Remove 2 Polyslider washers.
2) Remove Loading Gears (R) and (L), then Loading Plates (R) and (L) Assemblies can be removed.

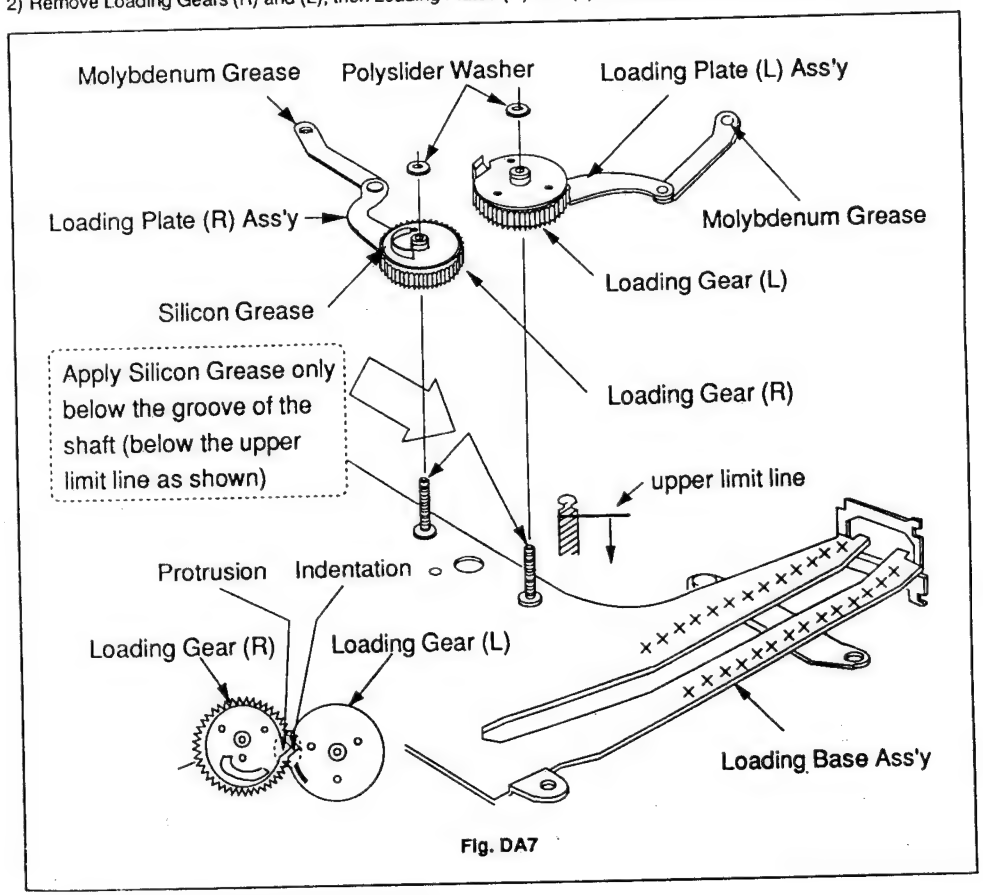

Fig. DA7

Note:
When reassembling, fit the protrusion of the Loading Gear (R) with the indentation of the Loading Gear (L) as shown.
When reassembling, apply the Molybdenum Grease to the sliding surfaces marked "xxx···" shown in Fig. DA7.

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ASSEMBLY PROCEDURE OF CASSETTE UP UNIT

Assembly Procedures of Synchronize Gear, Lift Gear (R) Assembly and Friction Gear Assembly

1. Pull the Cassette Holder Assembly toward the front until it stops.
2. Install the Lift Gear (R) Assembly so that the projection on the Lift Gear (R) Assembly aligns with the projection on the Synchronize Gear.
3. Install the Friction Gear Assembly so that the center hole of Friction Gear Assembly aligns with the hole of Lift Gear (R) Assembly as shown in Fig. DA5.

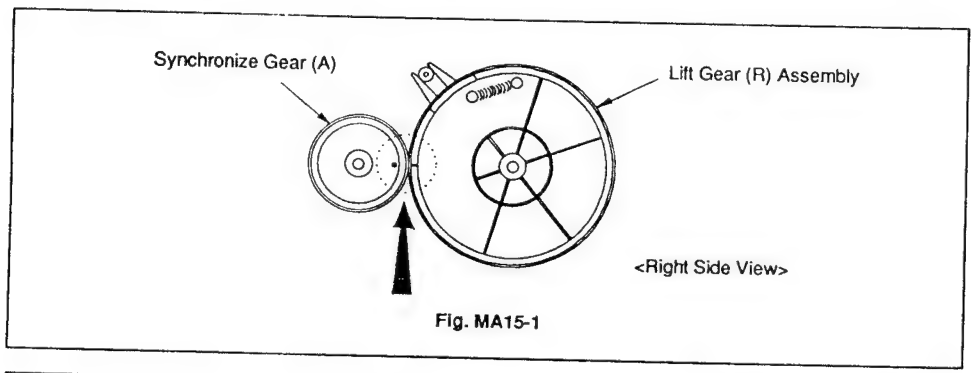

Fig. MA15-1

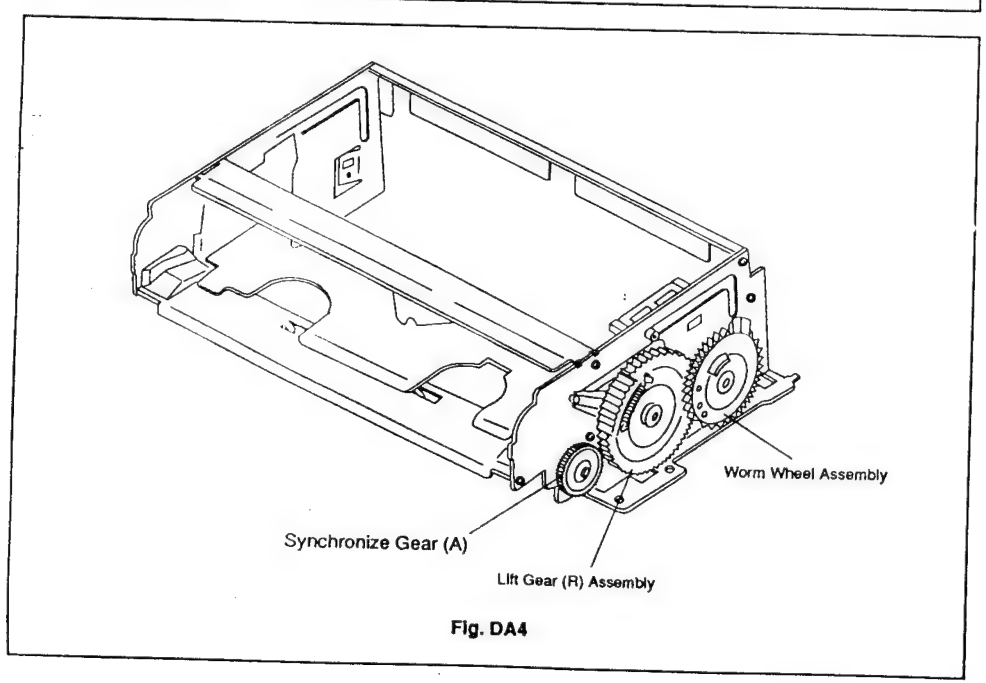

Fig. DA4

WORM WHEEL ASSEMBLY

When Assembling Worm Wheel Assembly, Refer to Fig. DA5 below.

1. Put the Friction Spring <A> portion into the groove (arrowed portion) on Worm Wheel.
2. Install the Friction Gear and place the Friction Spring <B> portion into the groove (arrowed portion) on Friction Gear.
3. Continue inserting the Friction Gear to the Worm Wheel while twisting clockwise.

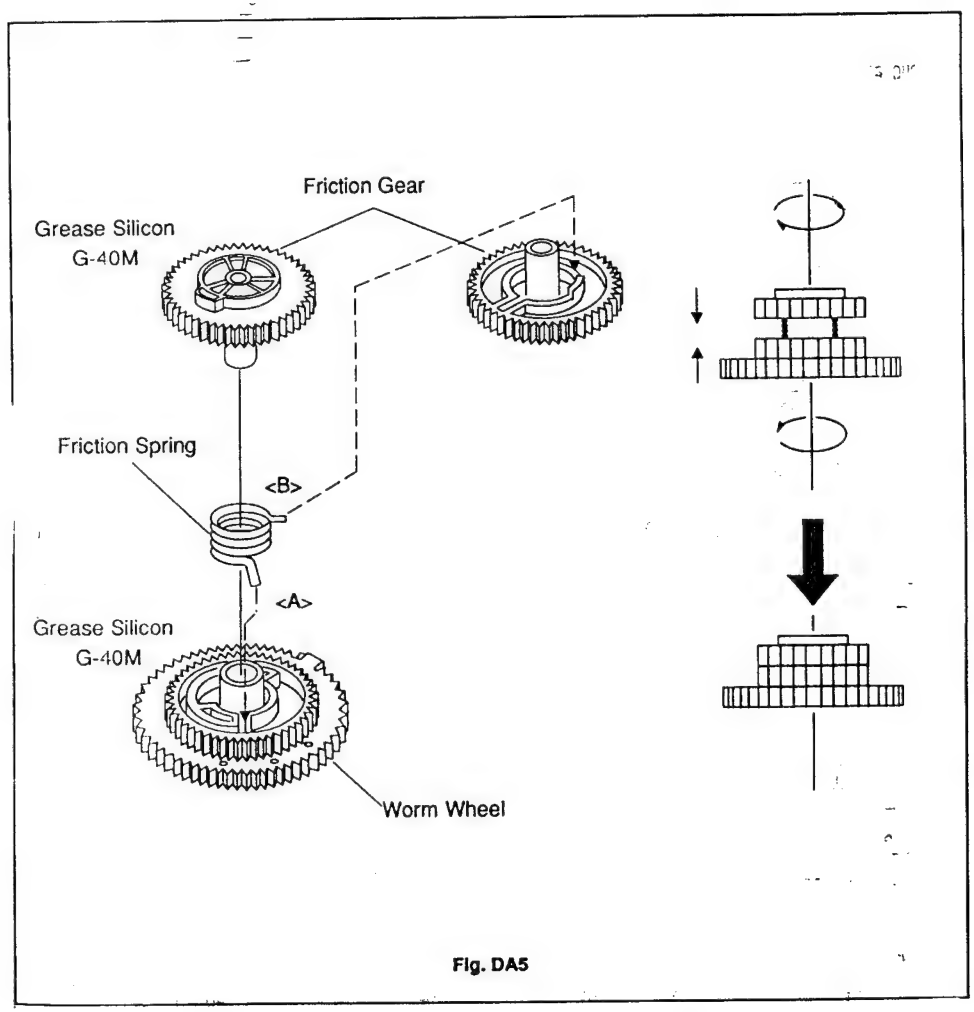

Fig. DA5

K6190ALC

LOADING GEAR (L) REMOVAL

1) Pull out the Loading Gear (L) by turning it clockwise slightly.

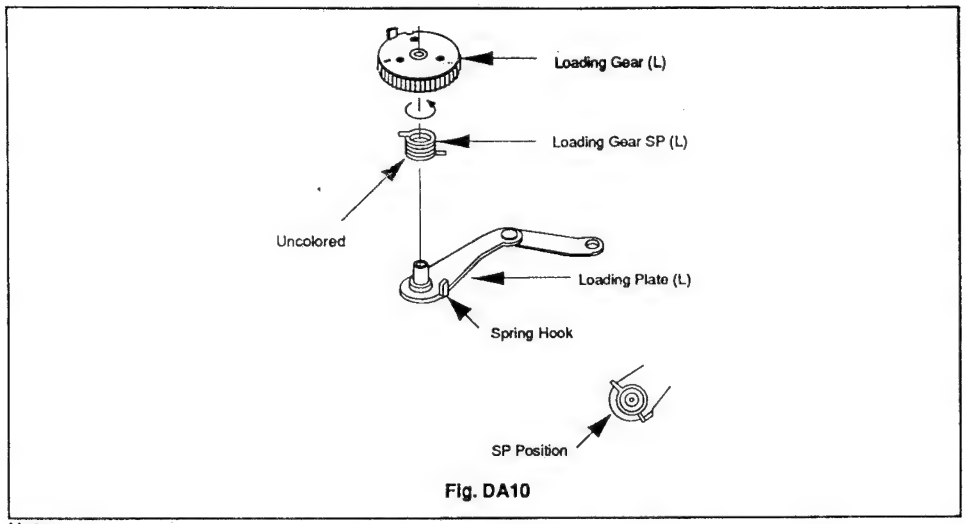

Fig. DA10

Note:
Do not mix Loading Gear SP (L) (Uncolored) with Loading Gear SP (R) (Colored in Blue).
Do not deform the Loading Plate (L).

LOADING GEAR (R) REMOVAL

1) Pull out the Loading Gear (R) by turning it counterclockwise slightly.

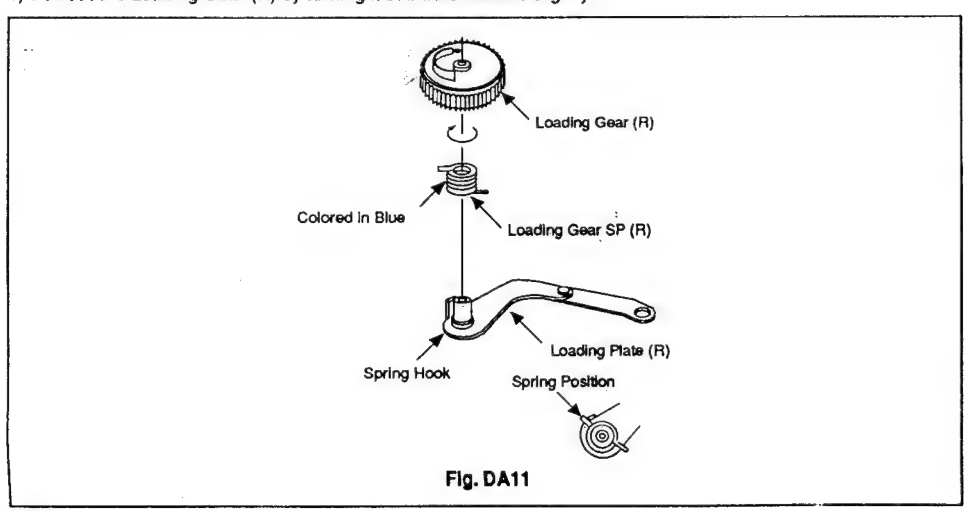

Fig. DA11

Note:
Do not deform the Loading Plate (R).
Do not mix Loading Gear SP (L) (Uncolored) with Loading Gear SP (R) (Colored in Blue).

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ELECTRICAL ADJUSTMENT INSTRUCTIONS [TV]

General Note: "C.B.A." is abbreviation for "Printed Circuit Board Assembly".

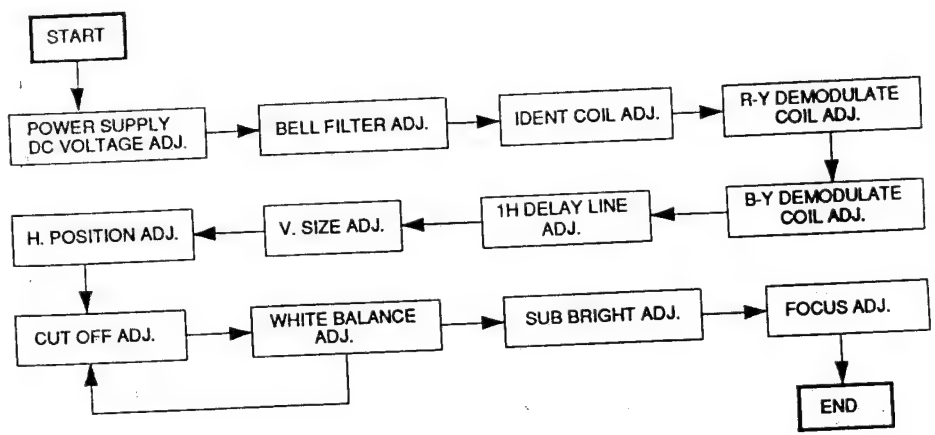
NOTE:
Electrical adjustments are required after replacing circuit components and certain mechanical parts. It is important to perform these adjustments only after all repairs and replacements have been completed. Also, do not attempt these adjustments unless the proper equipment is available.

TEST EQUIPMENT REQUIRED

1. Oscilloscope: Dual Trace with 10:1 probe
2. Monoscope
3. PAL and SECAM Pattern Generator
4. DC Volt Meter

HOW TO SET UP THE ADJUSTMENT MODE

Set Bright, Color, Contrast and Tint to center.



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5. B-Y DEMODULATE COIL ADJUSTMENT (FOR SECAM)

Purpose:

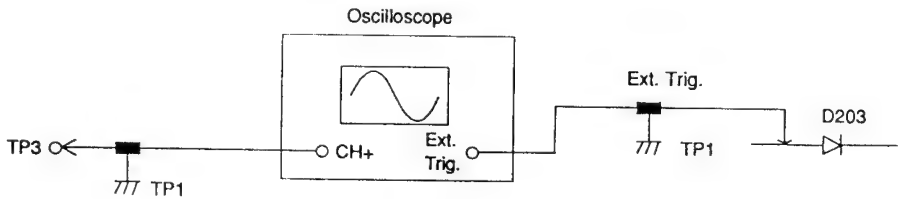
To adjust the level of B-Y color difference signal.

Symptom of Misadjustment:

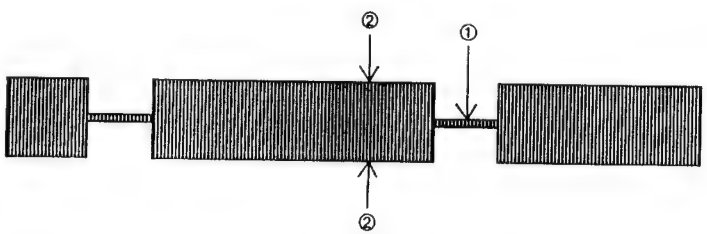
The R, G and B will be unbalanced.

Test Point	Adjustment Point	Mode	Input
TP3 TP1 (GND)	L301	---	SECAM Black Raster
Tape	M. EQ.	Spec.	
---	SECAM Pattern Generator Oscilloscope (20mV/div, 5ms/div - AC)	See Reference Notes below.	

Connections of M. EQ.



Figure



Reference Notes:

TP1, TP3, L301 : TV MAIN C.B.A.

1. Connect the equipment as shown in the above table.
2. Input the SECAM Black Raster.
3. Adjust L301 with core driver so that ① becomes center of ② as shown in the above table.

6. 1 H DELAY LINE ADJUSTMENT

Purpose:

To get correct 1H delay line when the PAL signal is entered.

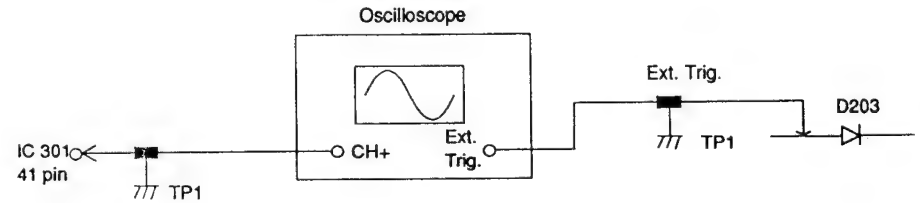
Symptom of Misadjustment:

The Anti-PAL signal part is colored when the Philips pattern is entered.

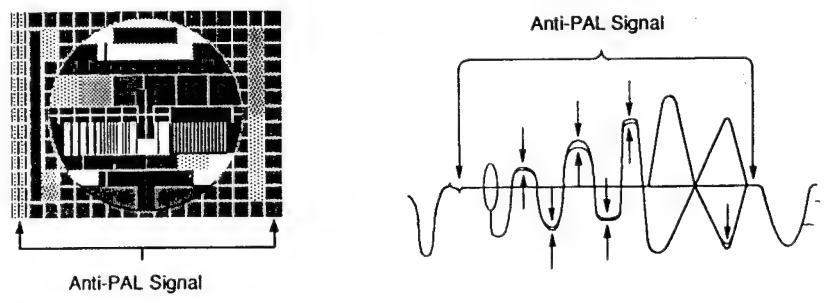
Each scanning line is colored on the color bar.

Test Point	Adjustment Point	Mode	Input
IC301 41 pin TP1 (GND)	L303, VR301	---	Philips Pattern
Tape	M. EQ.	Spec.	
---	Pattern Generator Oscilloscope	See Reference Notes below.	

Connections of M. EQ.



Figure



Reference Notes:

IC301, TP1, L303, VR301 : TV MAIN C.B.A.

1. Connect the equipment as shown in the above table.
2. Input the Philips Pattern.
3. Adjust L303 and VR301 so that the amplitude at Anti-PAL signal part becomes minimam (no color) and the waveform at the color bar part is not seen in double ("Venetian Blind" does not appear at the color bar signal part).

1. POWER SUPPLY DC VOLTAGE ADJUSTMENT

Purpose:

To get correct voltage.

Symptom of Misadjustment:

If voltage is incorrect, picture is dark, or VCR is not operated correctly.

Test Point	Adjustment Point	Mode	Input
D603 (Cathode) R602 (at C603)	VR602 VR601	POWER OFF POWER ON	---
Tape	M. EQ.	Spec.	
---	DC Volt Meter	16.5±0.3V 112.5±0.5V	

Connections of M. EQ.

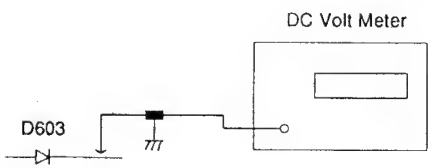


Fig. 1

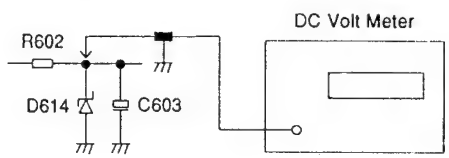


Fig. 2

Reference Notes:

D603, R602, VR601, VR602 : TV MAIN C.B.A.

1. Connect the equipment as shown in Fig. 1.
2. Adjust VR602 for reading 16.5±0.3V on the DC Volt Meter.
3. Connect the equipment as shown in Fig. 2.
4. Adjust VR601 for reading 112.5±0.5V on the DC Volt Meter.

Caution!

To avoid any hazards and damage of unit, be sure to do below;

1). Disconnect all cables from the VCR unit on the TV circuit.
2). Connect both terminal of C608 by 390Ω 5W resistor as VCR load resistance.
3). To inactivate F.B.T., ground the base of Q201.
4). Connect both terminal of C603 by 390Ω 140W resistor as F.B.T. load resistance.

2. BELL FILTER ADJUSTMENT (FOR SECAM)

Purpose:

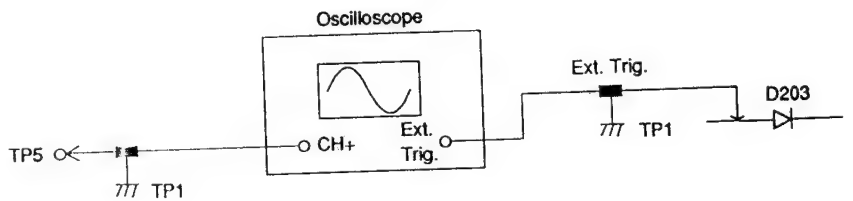
To adjust the center frequency of SECAM bell filter.

Symptom of Misadjustment:

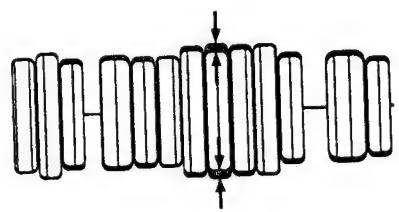
The color will be reversed when the SECAM signal is entered.

Test Point	Adjustment Point	Mode	Input
TP5 TP1 (GND)	L305	---	SECAM Color Bar
Tape	M. EQ.	Spec.	
---	SECAM Pattern Generator Oscilloscope (5mV/div, 10ms/div -AC)	See Reference Notes below.	

Connections of M. EQ.



Figure



Reference Notes:

TP1, TP5, L305 : TV MAIN C.B.A.

1. Connect the equipment as shown in the above table.
2. Input the SECAM Color Bar.
3. Adjust L305 with core driver to flat wave form.

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3. IDENT COIL ADJUSTMENT (FOR SECAM)

Purpose:

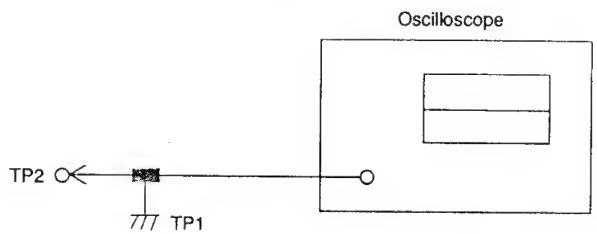
To adjust the peak value of SECAM IDENT signal.

Symptom of Misadjustment:

The display is not colored when the SECAM signal is entered.

Test Point	Adjustment Point	Mode	Input
TP2 TP1 (GND)	L308	---	SECAM Color Bar
Tape	M. EQ.	Spec.	
---	SECAM Pattern Generator Oscilloscope (0.2V/div, 5ms/div -DC)	See Reference Notes below.	

Connections of M. EQ.



Reference Notes:

TP1, TP2, L308 : TV MAIN C.B.A.

1. Connect the equipment as shown in the above table.
2. Input the SECAM Color Bar.
3. Adjust L308 with core driver to peak DC voltage.

4. R-Y DEMODULATE COIL ADJUSTMENT (FOR SECAM)

Purpose:

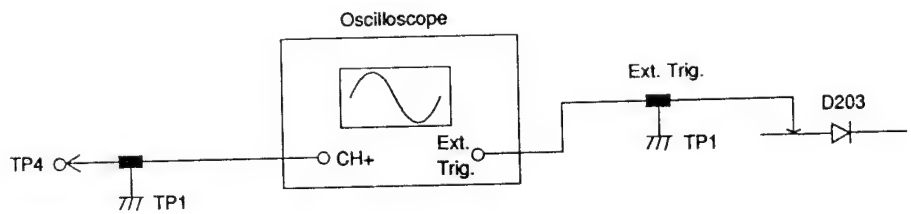
To adjust the level of R-Y color difference signal.

Symptom of Misadjustment:

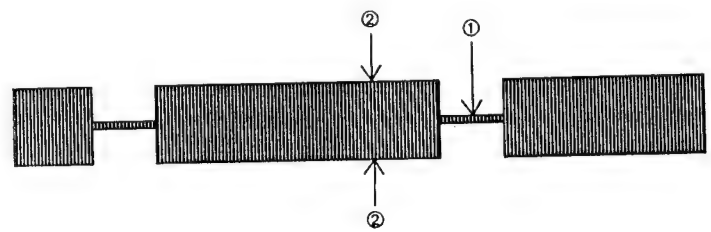
The R, G and B will be unbalanced.

Test Point	Adjustment Point	Mode	Input
TP4 TP1 (GND)	L302	---	SECAM Black Raster
Tape	M. EQ.	Spec.	
---	SECAM Pattern Generator Oscilloscope (20mV/div, 5MS/div - AC)	See Reference Notes below.	

Connections of M. EQ.



Figure



Reference Notes:

TP1, TP4, L302 : TV MAIN C.B.A.

1. Connect the equipment as shown in the above table.
2. Input the SECAM Black Raster.
3. Adjust L302 with core driver so that ① becomes center of ② as shown in the above table.

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9. CUT OFF ADJUSTMENT

Purpose:

To adjust the beam current of R, G, B and screen voltage.

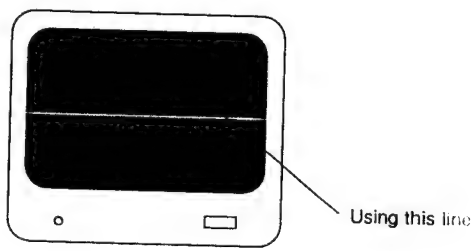
Symptom of Misadjustment:

White color may be reddish, greenish or bluish.

When the screen voltage is too high, the scanning line is appeared on the screen.

Test Point	Adjustment Point	Mode	Input
Screen	VR701, VR702, VR703, Screen-VR (F.B.T.)	---	White Raster (APL 100%)
Tape	M. EQ.	Spec.	
---	Pattern Generator	See Reference Notes below.	

Figure



Reference Notes:

VR701, VR702, VR703, VR704, VR705 : TV CRT C.B.A.

VR303, SW301 : TV MAIN C.B.A.

Screen-VR : TV MAIN C.B.A. (F.B.T.)

1. Operate the unit more than 20 minutes.
2. Degauss the CRT using Degaussing Coil.
3. Input the white Raster (APL 100%).
4. Turn the Screen-VR fully counterclockwise.
5. Set VR701(Blue), VR702(Green), VR703(Red), VR704(R. Drive), VR705(B. Drive) and VR303(Sub Bright) to center.
6. Set the SW301(Service SW) to ON.
7. Slowly turn the Screen-VR to the point where horizontal line just illuminates.
8. Adjust VR701(Blue), VR702(Green) and VR703(Red) so that horizontal line becomes pure white.
9. Turn off the SW301(Service SW).

Note:

Confirm that White Balance Adj. is correct after this adjustment, and attempt White Balance Adj. if needed.

10. WHITE BALANCE ADJUSTMENT

Purpose:

To mix red, green and blue beams correctly for pure white.

Symptom of Misadjustment:

White becomes bluish or reddish.

Test Point	Adjustment Point	Mode	Input
Screen	VR704, VR705	---	Color Bar signal with 100% White Level
Tape	M. EQ.	Spec.	
---	Pattern Generator	See Reference Notes below.	

Reference Notes:

VR704, VR705 : TV CRT C.B.A.

1. Operate the unit more than 20 minutes.
2. Face the unit to east. Degauss the CRT using Degaussing Coil.
3. Input the Color Bar signal.
4. Adjust VR704(R. DRIVE) and VR705(B. DRIVE) so that white area is shown pure white.

Note:

Confirm that Cut Off Adj. is correct after this adjustment, and attempt Cut Off Adj. if needed.

11. SUB BRIGHT ADJUSTMENT

Purpose:

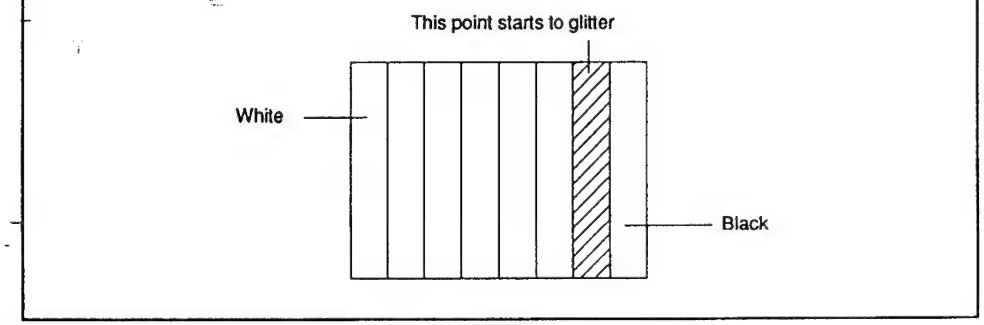
To get proper brightness.

Symptom of Misadjustment:

Proper brightness cannot be obtained by adjusting the Bright Control.

Test Point	Adjustment Point	Mode	Input
Screen	VR303	---	Gray Scale
Tape	M. EQ.	Spec.	
---	Pattern Generator	See Reference Notes below.	

Figure



Reference Notes:

VR303 : TV MAIN C.B.A.

1. Operate the unit more than 20 minutes.
2. Input the 8-step Gray scale.
3. Adjust VR303 to a point where the one level higher than the black-level starts flashing. (2nd level from the right)

12. FOCUS ADJUSTMENT

Purpose:

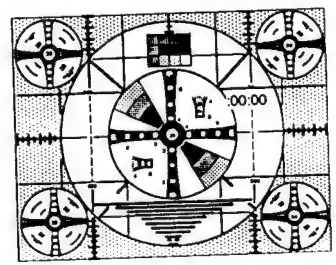
To get correct focus.

Symptom of Misadjustment:

Blurred image is shown on the display.

Test Point	Adjustment Point	Mode	Input
Screen	Focus-VR (F.B.T.)	---	Monoscope Pattern
Tape	M. EQ.	Spec.	
---	Monoscope	Clear picture	

Figure



Reference Note:

Focus-VR : TV MAIN C.B.A. (F.B.T.)

1. Operate the unit more than 20 minutes.
2. Input the Monoscopic Pattern.
3. Adjust Focus-VR to be obtained clear picture.

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7. V. SIZE ADJUSTMENT

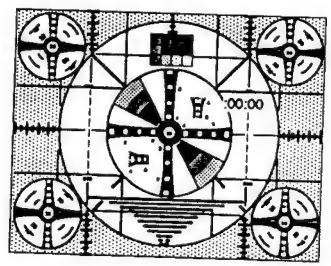
Purpose:

To get correct vertical height of screen image.

Symptom of Misadjustment:

Vertical height of screen image may not be properly displayed.

Test Point	Adjustment Point	Mode	Input
Screen	VR302	---	Monoscope Pattern
Tape	M. EQ.	Spec.	
---	Monoscope	90±5%	
Figure			



Reference Note:

VR302 : TV MAIN C.B.A.

1. Operate the unit more than 20 minutes.
2. Input the Monoscopic Pattern.
3. Adjust VR302 so that the monoscopic pattern will be 90±5% of display size and the circle is round.

8. H. POSITION ADJUSTMENT

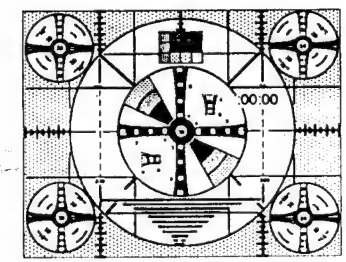
Purpose:

To get correct horizontal position of screen image.

Symptom of Misadjustment:

Horizontal position of screen image may not be properly displayed.

Test Point	Adjustment Point	Mode	Input
Screen	VR304 (R342)	---	Monoscope Pattern
Tape	M. EQ.	Spec.	
---	Monoscope	See Reference Notes below.	
Figure			



Reference Note:

VR304 : TV MAIN C.B.A.

1. Operate the unit more than 20 minutes.
2. Input the Monoscopic Pattern.
3. Adjust VR304 so that the right and left of monoscopic pattern will be equal.

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ELECTRICAL ADJUSTMENT INSTRUCTIONS [VCR]

General Note: "C.B.A." is abbreviation for "Printed Circuit Board Assembly".

NOTE:

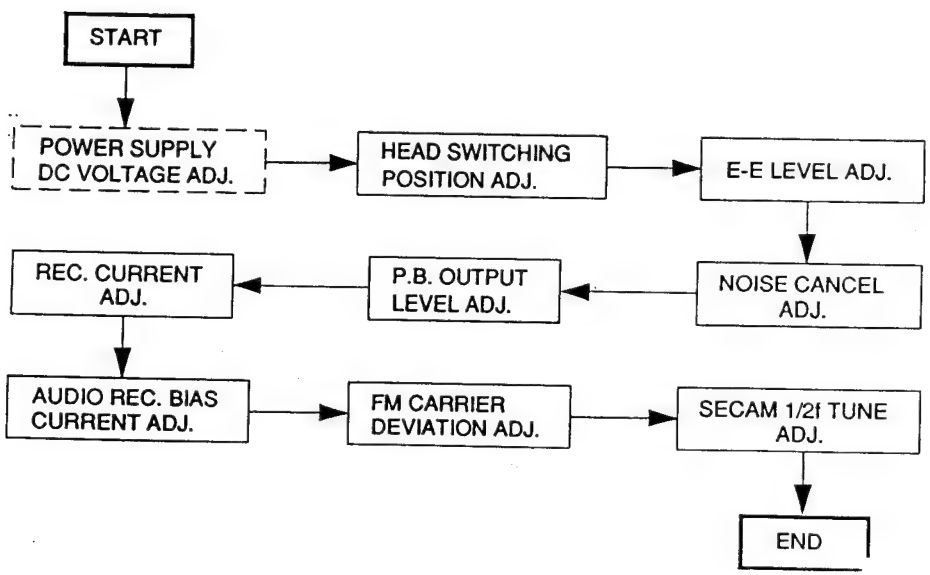
Electrical adjustments are required after replacing circuit components and certain mechanical parts. It is important to perform these adjustments only after all repairs and replacements have been completed. Also, do not attempt these adjustments unless the proper equipment is available.

TEST EQUIPMENT REQUIRED

1. Oscilloscope: Dual-trace with 10:1 probe, V-Range: 0.001~50v/Div.,F-Range: AC~DC-20MHz
2. PAL/SECAM Pattern Generator (Color bar with 100% white)
3. AC Voltmeter (RMS)
4. Alignment Tape (F6-A, Blank Tape)
5. Spectrum Analyzer

HOW TO SET UP THE ADJUSTMENT MODE

If not alterdy done, execute Power Supply DC Voltage Adj. (P. 16-2) first.



1. HEAD SWITCHING POSITION ADJUSTMENT

Note: Before attempting the mechanical adjustment, must be completed this adjustment.

Purpose:

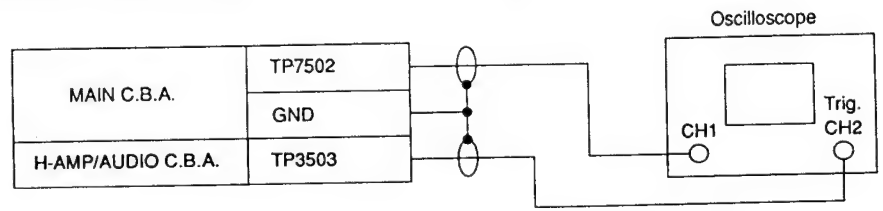
Determine the Head Switching Point during Playback.

Symptom of Misadjustment:

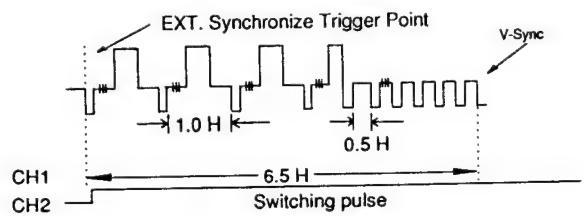
May cause Head Switching Noise or Vertical Jitter in the picture.

Test Point	Adj. Point	Mode	Input
TP7502 (V-OUT) TP3503 (RF-SW) GND	VR2001 (HEAD SWITCHING)	PLAY	—
Tape	M. EQ.	Spec.	
F6-A	Oscilloscope	6.5H±1H (412.7μs±60μs)	

Connections of M. EQ.



Figure



Reference Notes:

TP3503 : HEAD AMP/AUDIO C.B.A.
TP7502, VR2001 : VCR MAIN C.B.A.

1. Connect the equipment as shown in the above table.
2. Set tracking control to the neutral position.
   (Press the channel up and down bottons of the unit together during PLAY mode.)
3. Playback test tape and adjust VR2001 so that the V-sync front edge of CH1 video output waveform is delayed 6.5H(412.7μs) from the rising of CH2 Head Switching pulse waveform.

4. NOISE CANCEL ADJUSTMENT

Purpose:

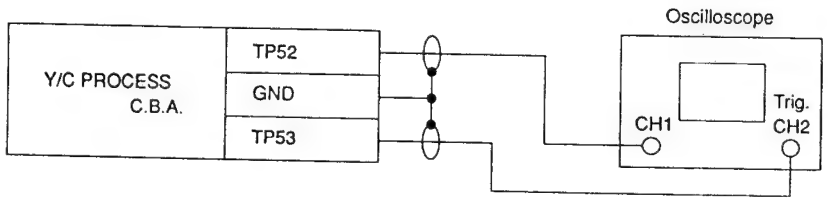
Improve the overall S/N Ratio, especially in the Low Frequency Component.

Symptom of Misadjustment:

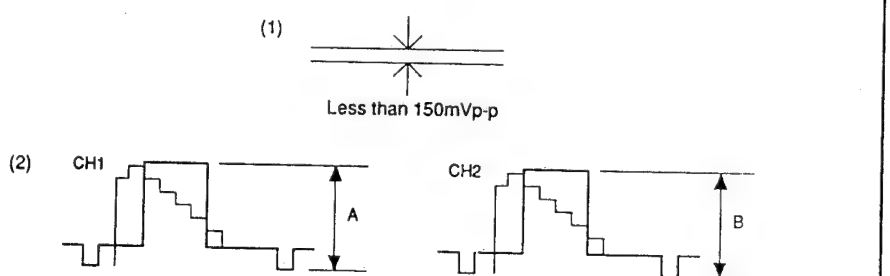
The S/N Ratio will be lower.

Test Point	Adj. Point	Mode	Input
TP52 (NOISE CANCEL) TP53 (NOISE CANCEL)	VR54 (NOISE CANCEL)	PLAY	—
Tape	M. EQ.	Spec.	
F6-A	Oscilloscope	See below.	

Connections of M. EQ.



Figure



Reference Notes:

TP52, TP53, VR54 : Y/C PROCESS C.B.A.

Adjust the Noise Cancel for choice (1) or (2).

(1): 1. Connect the equipment as shown in the above table.
2. Set the input trigger mode to CH2 and set trigger slope to (+).
3. Invert CH2 signal (TP53) and select ADD mode.
4. Playback the tape and adjust VR54 so that the level becomes minimum.

(2): 1. Connect the equipment as shown in the above table.
2. Set the input trigger mode to CH2 and set trigger slope to (+).

5. REC. CHROMA ADJUSTMENT

Purpose:

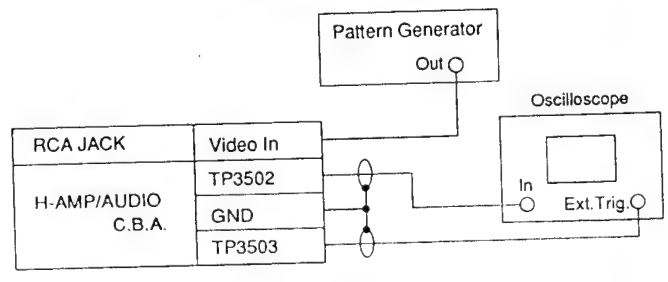
Set the optimum Record Chroma Level.

Symptom of Misadjustment:

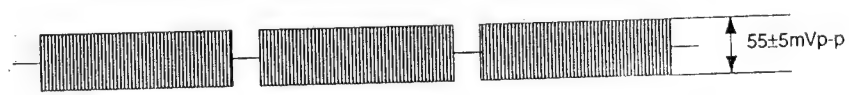
If the Record Chroma Level is too high, beats may cause on the picture, and in case of too low, the Chroma S/N Ratio will be lower.

Test Point	Adj. Point	Mode	Input
TP3502 (C-REC) TP3503 (RF-SW) GND	VR3501 (C-REC)	REC	Red Raster
Tape	M. EQ.	Spec.	
Blank Tape	Pattern Generator Oscilloscope	55±5mVp-p	

Connections of M. EQ.



Figure



Reference Notes:

TP3502, TP3503, VR3501 : HEAD AMP/AUDIO C.B.A.

1. Connect the equipment as shown in the above table.
2. Input Red only signal to Video Input.
3. Adjust VR3501 so that the Chroma Level becomes 55±5mVp-p.

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6. AUDIO REC. BIAS CURRENT ADJUSTMENT

Purpose:

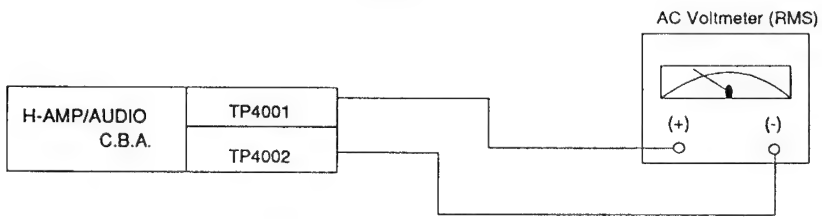
Set Optimum Record Audio Bias Level.

Symptom of Misadjustment:

If Audio Bias Level is too high, the Frequency Response deteriorates. If the level is too low, sound distortion may cause.

Test Point	Adj. Point	Mode	Input
TP4001 (BIAS+) TP4002 (BIAS–) GND	VR4001 (BIAS)	REC	—
Tape	M. EQ.	Spec.	
Blank Tape	AC Voltmeter or Oscilloscope	22.0mV RMS	

Connections of M. EQ.



*** Do not enter Input Signal.**

Reference Notes:

TP4001, TP4002, VR4001 : HEAD AMP/AUDIO C.B.A.

1. Connect the equipment as shown in the above table.
2. Insert a blank tape and set the VCR to REC (SP) mode.
   (Do not set to PAUSE. In PAUSE mode, the bias oscillation is stopped.)
3. Adjust VR4001 so that the voltage becomes 22.0mV.

7. FM CARRIER DEVIATION ADJUSTMENT

Purpose:

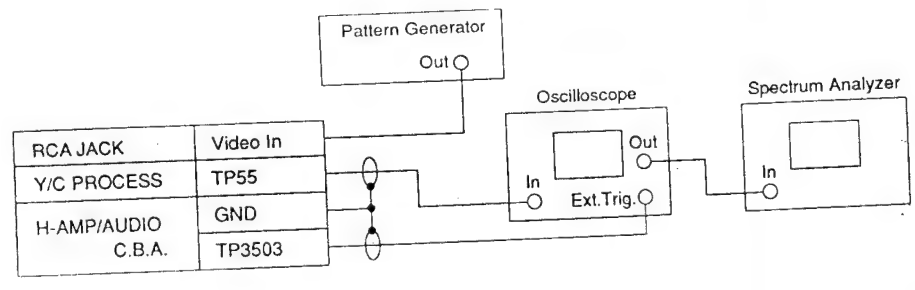
To align FM carrier deviation.

Symptom of Misadjustment:

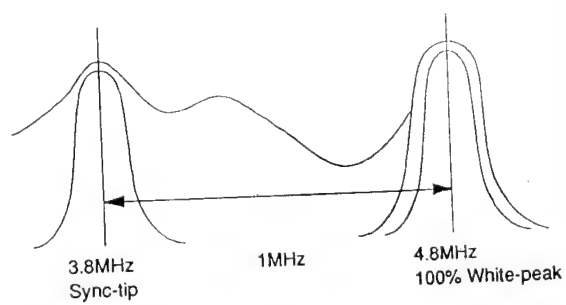
If the deviation is not correct, abnormal contrast of light and shadow on the picture may be seen.
If the carrier deviation is not correct, Beats appear on the picture.

Test Point	Adj. Point	Mode	Input
TP55 (CRR/DEV) TP3503 (RF-SW)	VR51 (CARR) VR52 (DEVIATION)	REC	White Raster (APL 100%)
Tape	M. EQ.	Spec.	
Blank Tape	Pattern Generator Spectrum Analyzer Oscilloscope	Sync-tip 3.8MHz±50KHz 100% White peak 4.8MHz±50KHz	

Connections of M. EQ.



Figure



Reference Notes:

TP55, VR51, VR52 : Y/C PROCESS C.B.A.
TP3503 : HEAD AMP/AUDIO C.B.A.

1. Connect the equipment as shown in the above table.
2. Input White 100% only signal to Video Input.
3. Adjust Sync-tip to 3.8MHz±50KHz by VR51, White-peak for 4.8MHz±50KHz by VR52.

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2. E-E LEVEL ADJUSTMENT

Purpose:

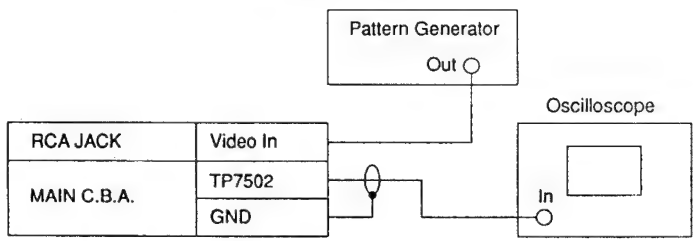
Set the optimum E-E Luminance Level.

Symptom of Misadjustment:

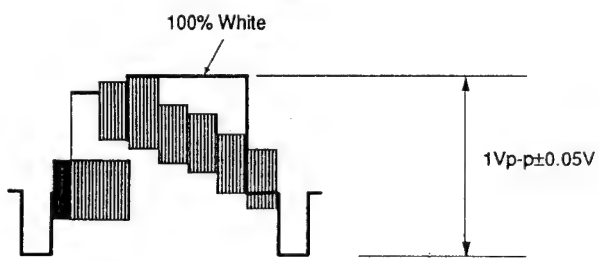
If the E-E Level is too high, TV may overload. If the Level is too low, the S/N Ratio deteriorates.

Test Point	Adj. Point	Mode	Input
TP7502 (V-OUT)	VR55 (E-E)	E-E	Color Bar with 100% White
Tape	M. EQ.	Spec.	
---	Pattern Generator Oscilloscope	1Vp-p ±0.05V	

Connections of M. EQ.



Figure



Reference Notes:

TP7502 : VCR MAIN C.B.A.
VR55 : Y/C PROCESS C.B.A.

1. Connect the equipment as shown in the above table.
2. Input Color Bar signal with 100% White to Video Input.
3. Adjust VR55 so that the video level becomes 1Vp-p ±0.05V. (Connected to TV).

3. P.B. OUTPUT LEVEL ADJUSTMENT

Purpose:

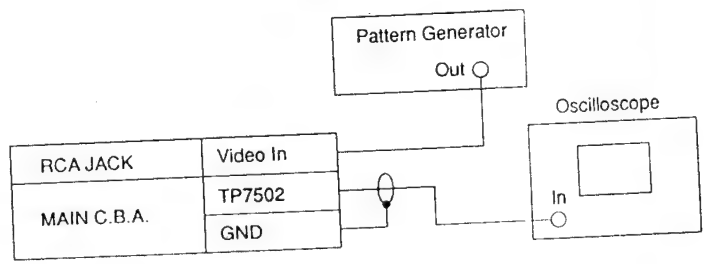
Set the Optimum Playback Luminance Level.

Symptom of Misadjustment:

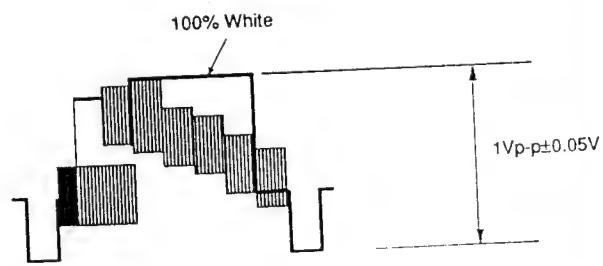
If the P.B. Output Level is too high, TV may overload. If the Level is too low, the S/N Ratio deteriorates.

Test Point	Adj. Point	Mode	Input
TP7502 (V-OUT)	VR53 (PB LEVEL)	PLAY	—
Tape	M. EQ.	Spec.	
F6-A	Pattern Generator Oscilloscope	1Vp-p±0.05V	

Connections of M. EQ.



Figure



Reference Notes:

TP7502 : VCR MAIN C.B.A.
VR53 : Y/C PROCESS C.B.A.

1. Connect the equipment as shown in the above table.
2. Playback test tape and adjust VR53 so that the video level becomes 1Vp-p±0.05V. (Connected to TV)

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8. SECAM 1/2f TUNE ADJUSTMENT

Purpose:

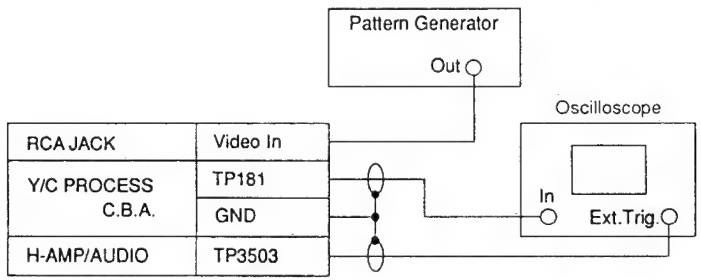
To detect SECAM Signal Correctly.

Symptom of Misadjustment:

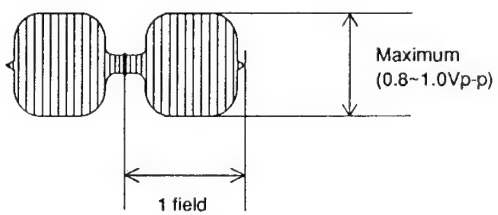
Black and White Picture only appears if SECAM Signal is Low Level.

Test Point	Adj. Point	Mode	Input
TP181-(SECAM) TP3503 (RF-SW)	L181 (SECAM)	REC	SECAM Color Bar
Tape	M. EQ.	Spec.	
Blank Tape	Pattern Generator Oscilloscope	See below.	

Connections of M. EQ.



Figure

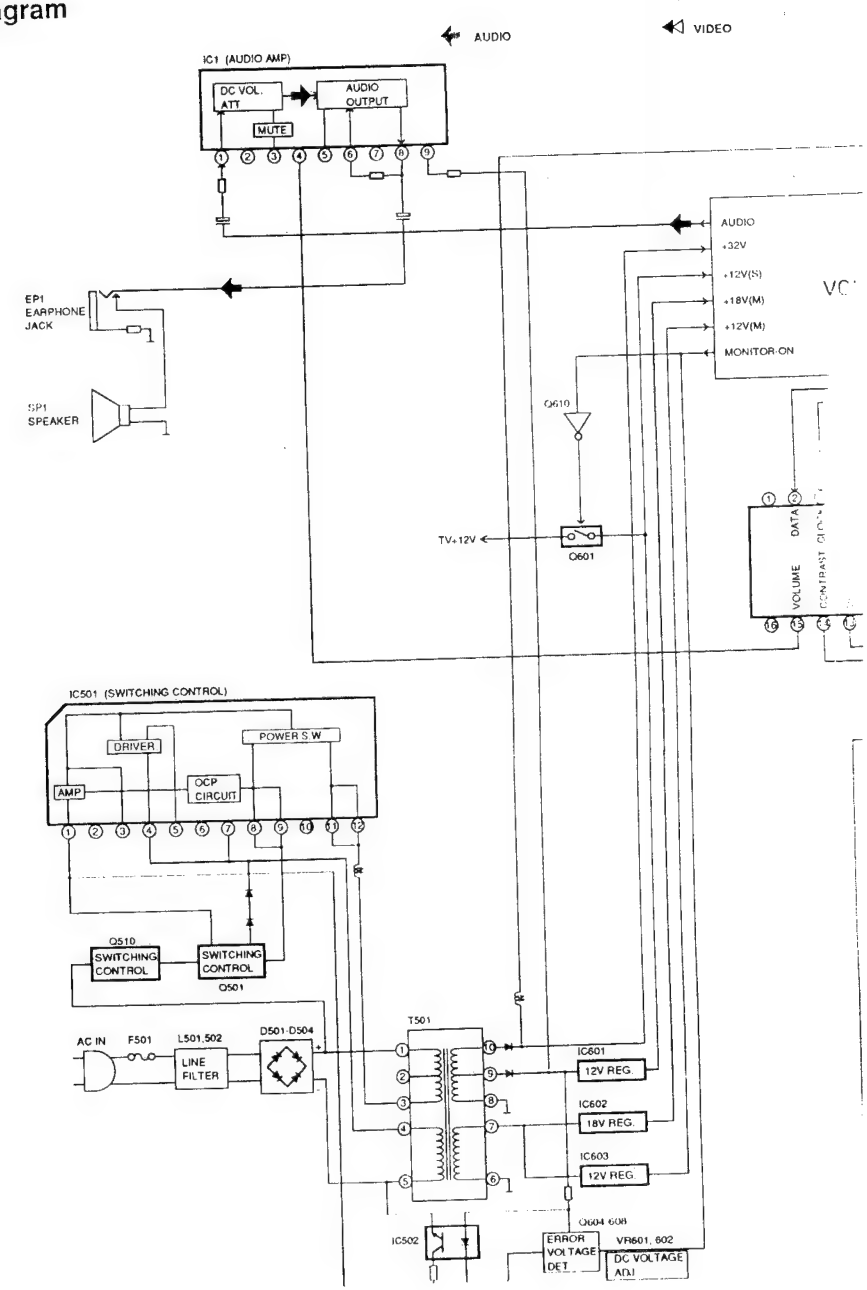


Reference Notes:

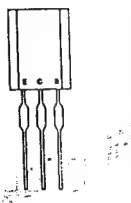
TP181, L181 : Y/C PROCESS C.B.A.
TP3503 : HEAD AMP C.B.A.

1. Connect the equipment as shown in the above table.
2. Input SECAM color bar signal to Video Input.
3. Adjust L181 so that output level becoms maximum.

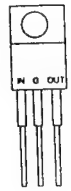
TV/CRT Block Diagram



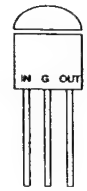
IC AND TRANSISTOR LEAD IDENTIFICATIONS



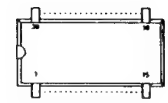
2SA608 DTA124
2SA933 DTA143
2SA934 DTC124
2SC536 DTC144
2SC1740 DTC114
2SC2058
2SC2839
2SC3400
2SA1346
2SA1317



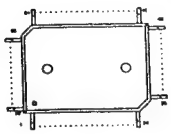
AN78M05
NJM78M05
AN78M09
NJM78M09
µPC78M05



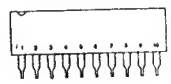
PST529



EARM001
LA7323



QSMQA0RSN007

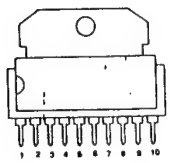


BA6209N
GMM1021*S***

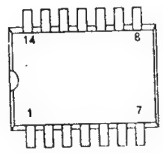
LA7210

L5631

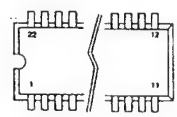
A: Anode
C: Cathode



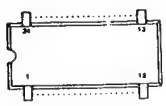
BA6219B



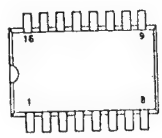
BA10324
AN6368



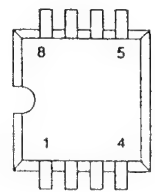
LA7320



LA7282
LA7333

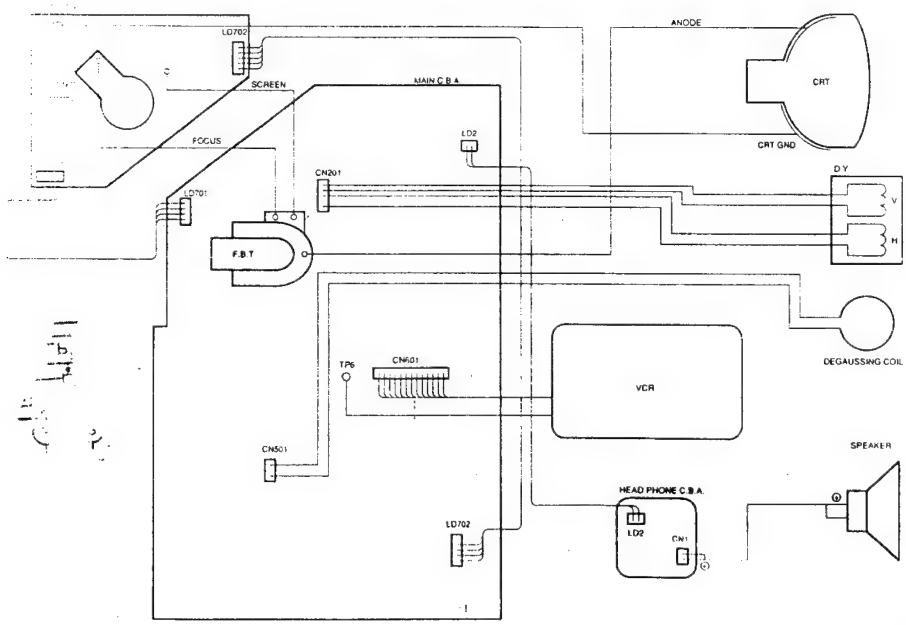


LA7370
BU4053



LC8992
X24C01

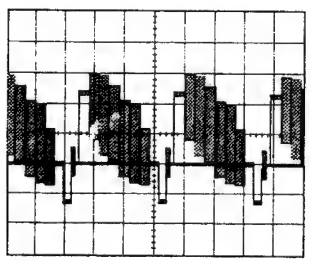
WIRING DIAGRAM [TV]



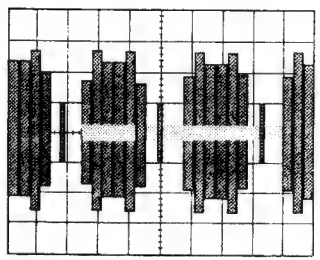
B6400WI

WAVEFORM PHOTOGRAPHS [TV]

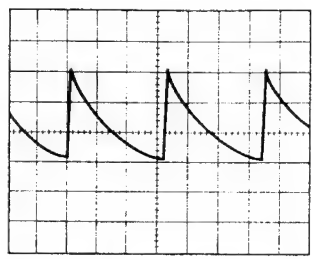
WF1 - WF10 = Waveform Check Points



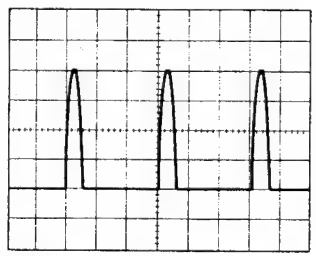
WF1
1 DIV=20µs 1 DIV=0.5V



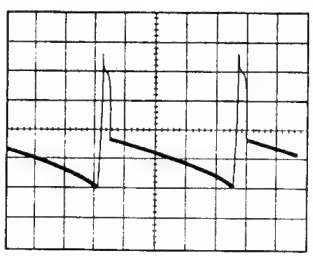
WF2
1 DIV=20µs 1 DIV=0.1V



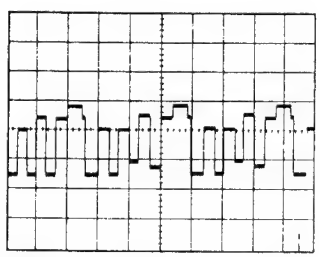
WF3
1 DIV=20µs 1 DIV=0.5V



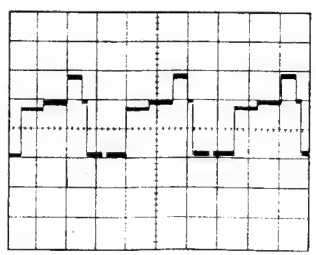
WF4
1 DIV=20µs 1 DIV=250V



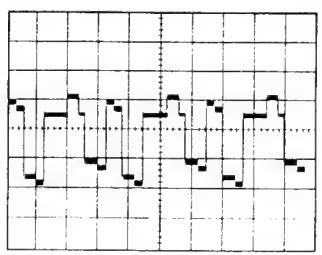
WF5
1 DIV=5ms 1 DIV=10V



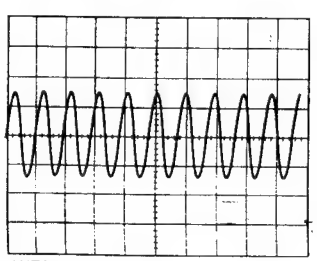
WF6
1 DIV=20µs 1 DIV=50V



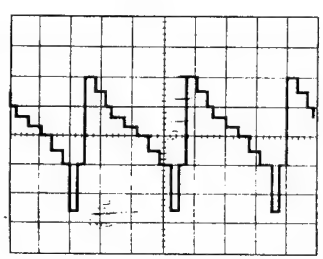
WF7
1 DIV=20µs 1 DIV=50V



WF8
1 DIV=20µs 1 DIV=50V



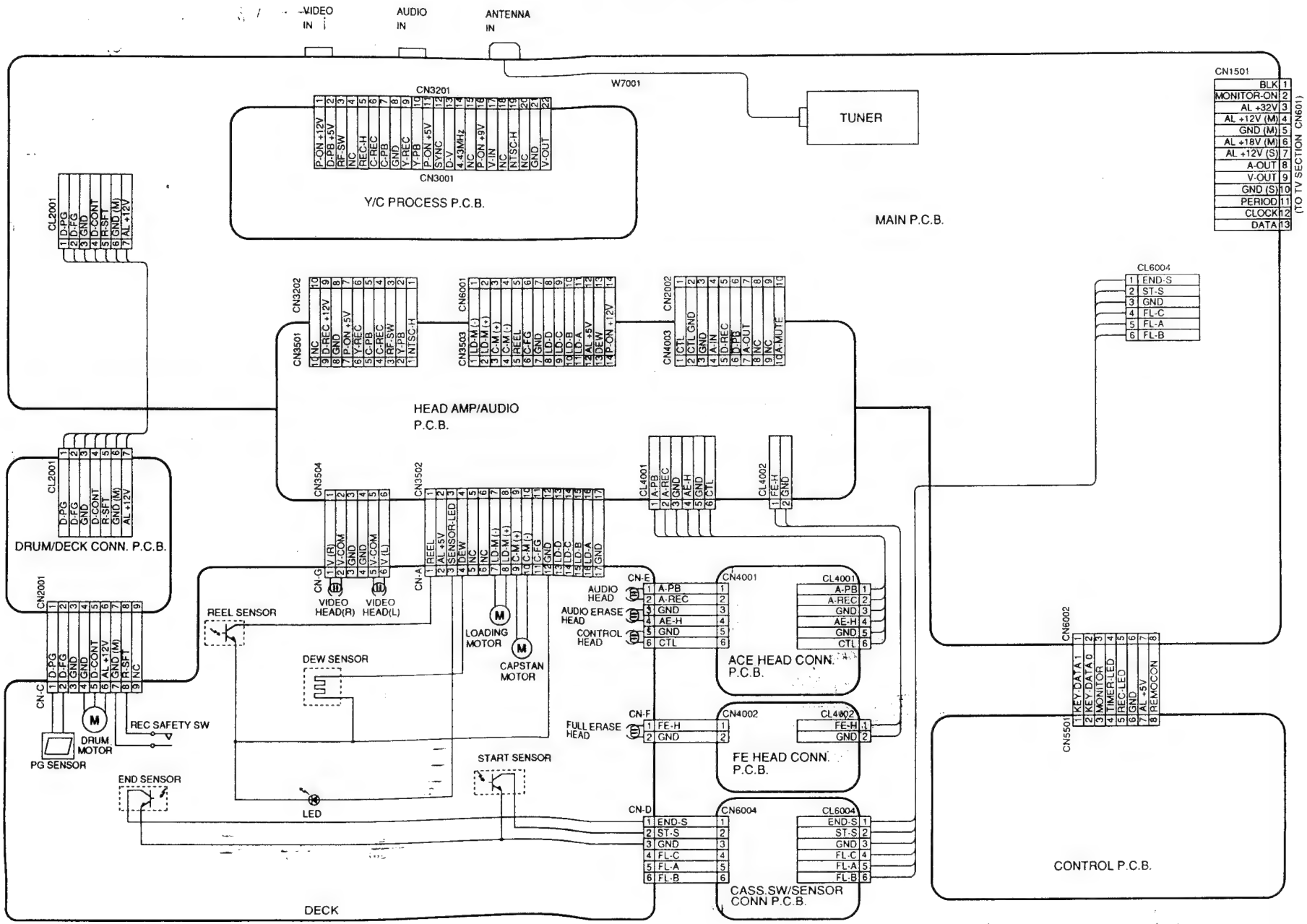
WF9
1 DIV=1ms 1 DIV=2V



WF10
1 DIV=20µs 1 DIV=200mV

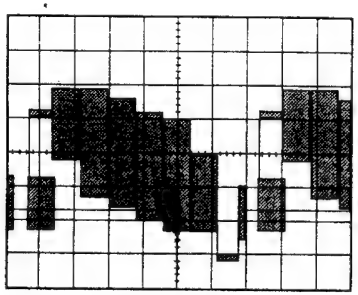
WAVEFORM NOTES:
★ Operation:Input PAL color bar signal
Brightness:Center
Contrast:Center
Color:Center
Tint:Center

WIRING DIAGRAM [VCR]

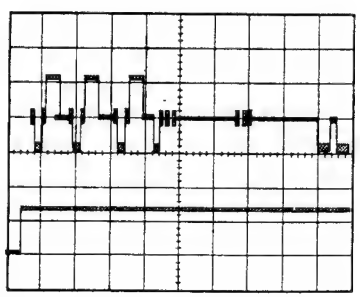


WAVEFORM PHOTOGRAPHS [VCR]

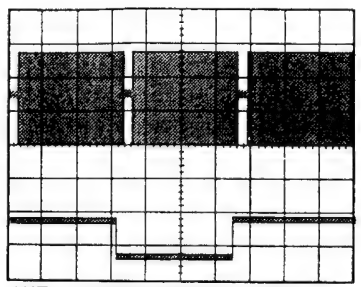
WF1 - WF5 = Waveform Check Points



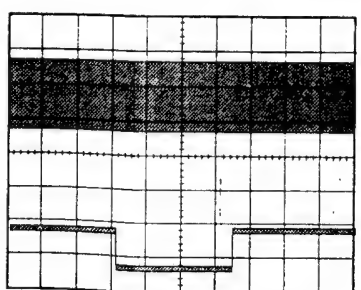
WF1 TP7502 (V-OUT)
1 DIV=10μs 1 DIV=0.2V



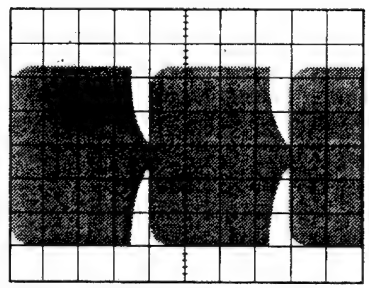
WF2 UPPER:TP7502 (V-OUT)
LOWER:TP3503 (RF-SW)
UPPER :1 DIV=50μs 1 DIV=0.5V
LOWER :1 DIV=50μs 1 DIV=5.0V



WF3 UPPER:TP3502 (C-REC)
LOWER:TP3503 (RF-SW)
UPPER :1 DIV=5ms 1 DIV=20mV
LOWER :1 DIV=5ms 1 DIV=5.0V



WF 4 UPPER:TP3504 (C-PB)
LOWER:TP3503 (RF-SW)
UPPER :1 DIV=5ms 1 DIV=0.1V
LOWER :1 DIV=5ms 1 DIV=5.0V



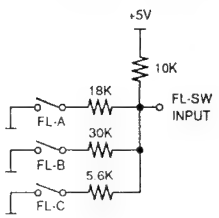
WF 5 TP181 (SECAM)
1 DIV=5ms 1 DIV=0.2V

WAVEFORM NOTES:
★ Operation:Input PAL color bar signal
Brightness:Center
Contrast:Center
Color:Center
Tint:Center

SYSTEM CONTROL TIMING CHART

Chart 1

POSITION	FL-A	FL-B	FL-C	FL-SW INPUT VOLTAGE	MARK
CASSETTE LOAD	OFF	OFF	OFF	4.5V ~ 5.0V	a
EJECT (CASSETTE OUT)	OFF	ON	OFF	3.5V ~ 3.9V	b
TAPE LOADING/FL-A ON	ON	OFF	OFF	3.0V ~ 3.4V	c
EJECT/CASSETTE INSERT	ON	ON	OFF	2.4V ~ 2.9V	d
CASSETTE IN	OFF	OFF	ON	0V ~ 2.1V	e



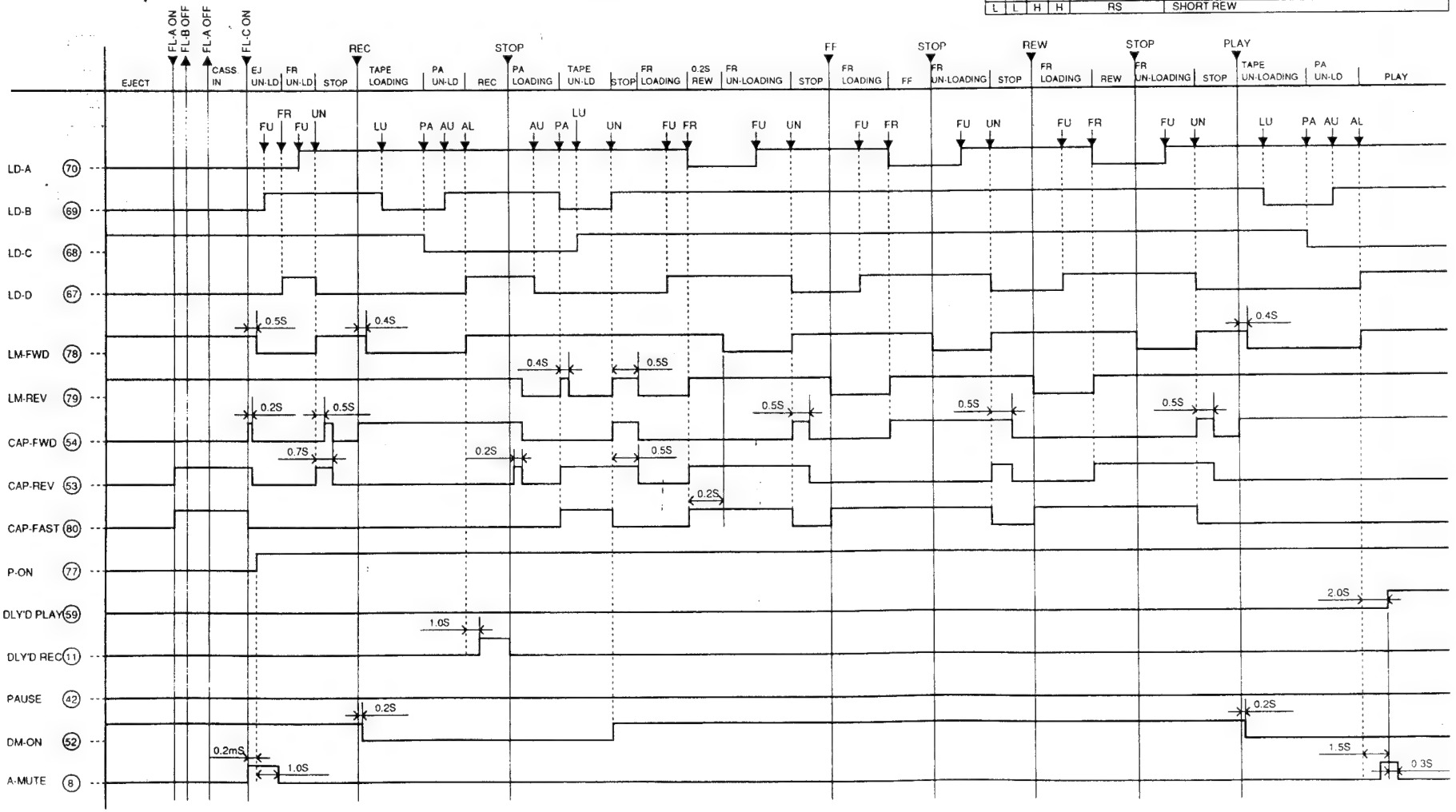
FRONT LOADING SWITCH

FL-A ON	CASSETTE IN DETECT
FL-B ON	CASSETTE UP DETECT
FL-C ON	CASSETTE DOWN DETECT

TAPE LOADING SWITCH H=1 L=0

LD-SW A	B	C	D	SYMBOL	POSITION
L	L	H	L	EJ	CASSETTE LOADING, EJECT
L	H	H	L	EU	INTERMEDIATE
L	H	H	H	FR	FF, REW
H	H	H	H	FU	INTERMEDIATE
H	H	H	L	UN	STOP 2 (POWER OFF POSITION)
H	L	H	L	LU	TAPE LOAING
H	L	L	L	ST	STOP 1 (QUICK START POSITION1, GEAR CHANGE)
H	H	L	L	AU	INTERMEDIATE
H	H	L	H	AL	PLAY, REC, PAUSE
L	H	L	H	FS	INTERMEDIATE
L	L	L	H	RU	INTERMEDIATE
L	L	H	H	RS	SHORT REW

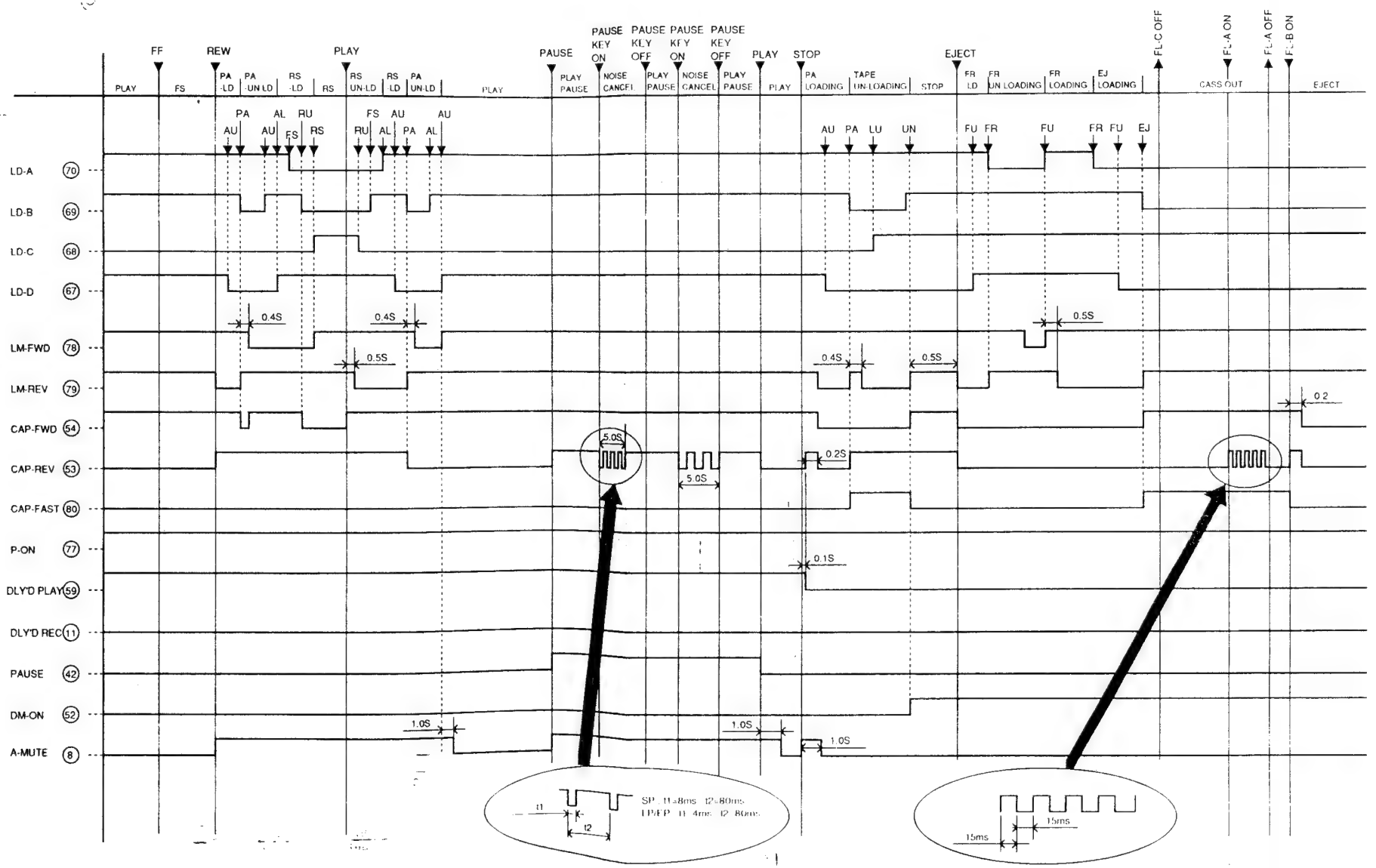
1. OFF → CASS.IN → REC → STOP → FF → STOP → REW → STOP → PLAY



K2870TI

Chart 2

2. PLAY → FF(FS) → REW(RS) → PLAY → PAUSE → NOISE CANCEL → PLAY → STOP → EJECT



K2870TI

IC6001 (SYSTEM CONTROL / TIMER IC)

Note: H ≥ 4.6V, L ≤ 0.5V (Approx.)

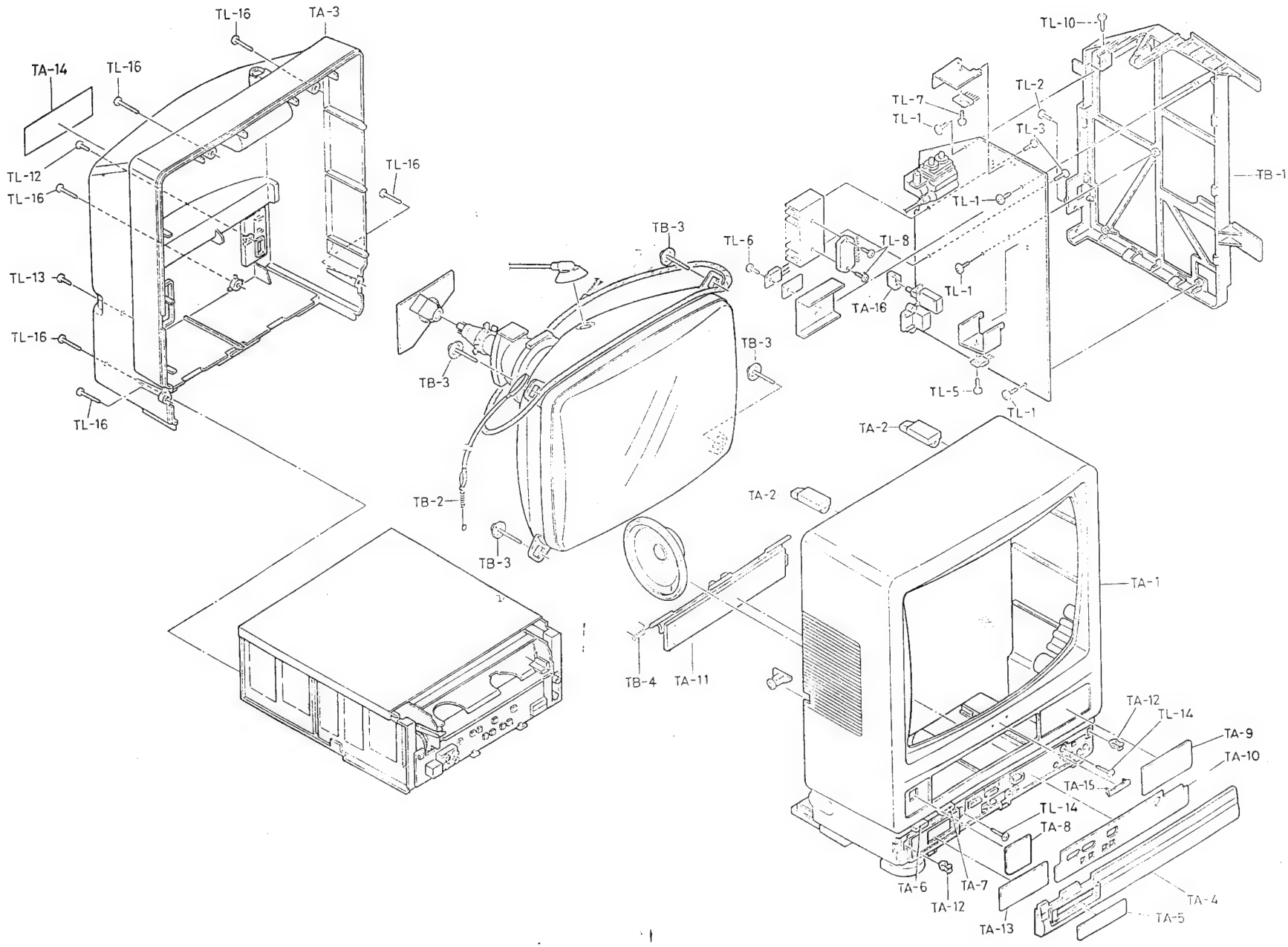
Pin No.	In/Out	Signal Name	Function	Active Level
1	OUT	DATA	DAC IC (TV Section) Control Signal (Data)	H
2	OUT	CLOCK	DAC IC (TV Section) Control Signal (Clock)	H
3	OUT	PERIOD	DAC IC (TV Section) Control Signal (Period)	H
4	OUT	AFT-DEF	AFT Defeat Signal	H
5	OUT	BAND VL	Tuner Band Signal (VL Band)	H
6	OUT	BAND VH	Tuner Band Signal (VH Band)	H
7	OUT	BAND U	Tuner Band Signal (U Band)	H
8	OUT	A-MUTE	Audio Mute Signal	H
9	-	NC		
10	OUT	MONITOR	Monitor LED Control	L
11	OUT	D-REC	Video/Audio Recording Instruction	H
12	OUT	NTSC-H	"H" at NTSC Mode	H
13	-	NC		
14	-	NC		
15	-	NC		
16	OUT	BLUE	"H" at Blue Back Mode	H
17	OUT	REC-LED	Record LED Control	H
18	OUT	TIMER-LED	Timer LED Control	H
19	-	NC		
20	-	NC		
21	-	NC		
22	-	NC		
23	-	T5	Key Data Signal Output Port	H
24	-	T4	Not Used	
25	-	T3	Key Data Signal Output Port	H
26	OUT	T2	Key Data Signal Output Port	H
27	OUT	T1	Key Data Signal Output Port	H
28	OUT	T0	Key Data Signal Output Port	H
29	IN	CTL-P	Control Pulse Signal	-
30	OUT	OSC 2 OUT	Crystal Oscillator 32KHz Output	-
31	IN	OSC 2 IN	Crystal Oscillator 32KHz Input	-
32	IN	$\overline{\text{RESET}}$	Reset at RESET Signal Input "L", Normal at "H"	L
33	-	NC		
34	IN	VDD	Power Source (+5V)	+5V
35	IN	KEY DATA 0	Key Scan Signal Input Port	H
36	IN	KEY DATA 1	Key Scan Signal Input Port	H
37	IN	KEY DATA 2	Key Scan Signal Input Port	H
38	OUT	OSD STB	On-screen IC Control Signal (STB)	-
39	IN	KEY DATA 3	Key Scan Signal Input Port	H
40	IN	KEY DATA 4	Key Scan Signal Input Port	H
41	IN	END-S	Tape End Position Detect	L
42	IN	PAUSE	Play Pause LED Control	H
43	IN	C-FG	Capstan Freq. Generator	~
44	IN	REEL	Reel Rotation Signal Input	-
45	-	NC		
46	IN	SD	Tuner/Video Sync Signal	L
47	OUT	S-CLK	Servo IC Timing Clock	-
48	OUT	OSD-CLK	On-screen IC Control Signal (Clock)	-
49	OUT	S-DATA	Servo IC Signal (Data)	-
50	IN/OUT	MON-DATA	Memory IC Data	-
51	OUT	MON-CLK	Memory IC Timing Clock	-
52	OUT	$\overline{\text{D-ON}}$	Drum Rotate Instruction	L
53	OUT	C-REV	Capstan Motor Reverse Instruction	H
54	OUT	C-FWD	Capstan Motor Forward Instruction	H
55	IN	AFT-DOWN	Tuner AFT Voltage Input, "L" at under 2.5V of AFT Voltage	L
56	IN	AFT-UP	Tuner AFT Voltage Input, "H" at over 5.5V of AFT Voltage	H
57	IN	RF-SW	Radio Frequency Signal Switching Pulse	-
58	IN	OSD-BUSY	On-screen IC Control Signal (Busy)	-
59	OUT	$\overline{\text{D-PB}}$	Video/Audio Playback Instruction Signal	L
60	OUT	T-DAC	Tuner Tuning Voltage Control Signal	-
61	IN	P-DOWN	"L" at Power Failure, "H" at Normal	L
62	IN	REMOCON	Remote Control Serial Signal Input	-
63	IN	ST-S	Tape Start Position Detection	L
64	IN	FL-C	Cassette In Detector	L
65	IN	FL-B	Cassette Out Detector	L
66	IN	FL-A	Cassette Start Detector	L
67	IN	LD-D	Tape Loading Position Detector	L
68	IN	LD-C	Tape Loading Position Detector	L
69	IN	LD-B	Tape Loading Position Detector	L
70	IN	LD-A	Tape Loading Position Detector	L
71	-	GND	GND	0V
72	IN	OSC 1 IN	Crystal Oscillator 4.19MHz Input	-
73	-	NC		
74	OUT	OSC 1 OUT	Crystal Oscillator 4.19MHz Output	-
75	IN	VDD	Power Source (+5V)	+5V
76	-	GND	GND	0V
77	OUT	P-ON	POWER-ON Control	H
78	OUT	LD-FWD	Tape Loading Instruction	H
79	OUT	LD-REV	Tape Unloading Instruction	H
80	OUT	C-FAST	Capstan Motor High Speed Instruction	H

IC PIN FUNCTION

IC101 (D/A CONVERTER IC)

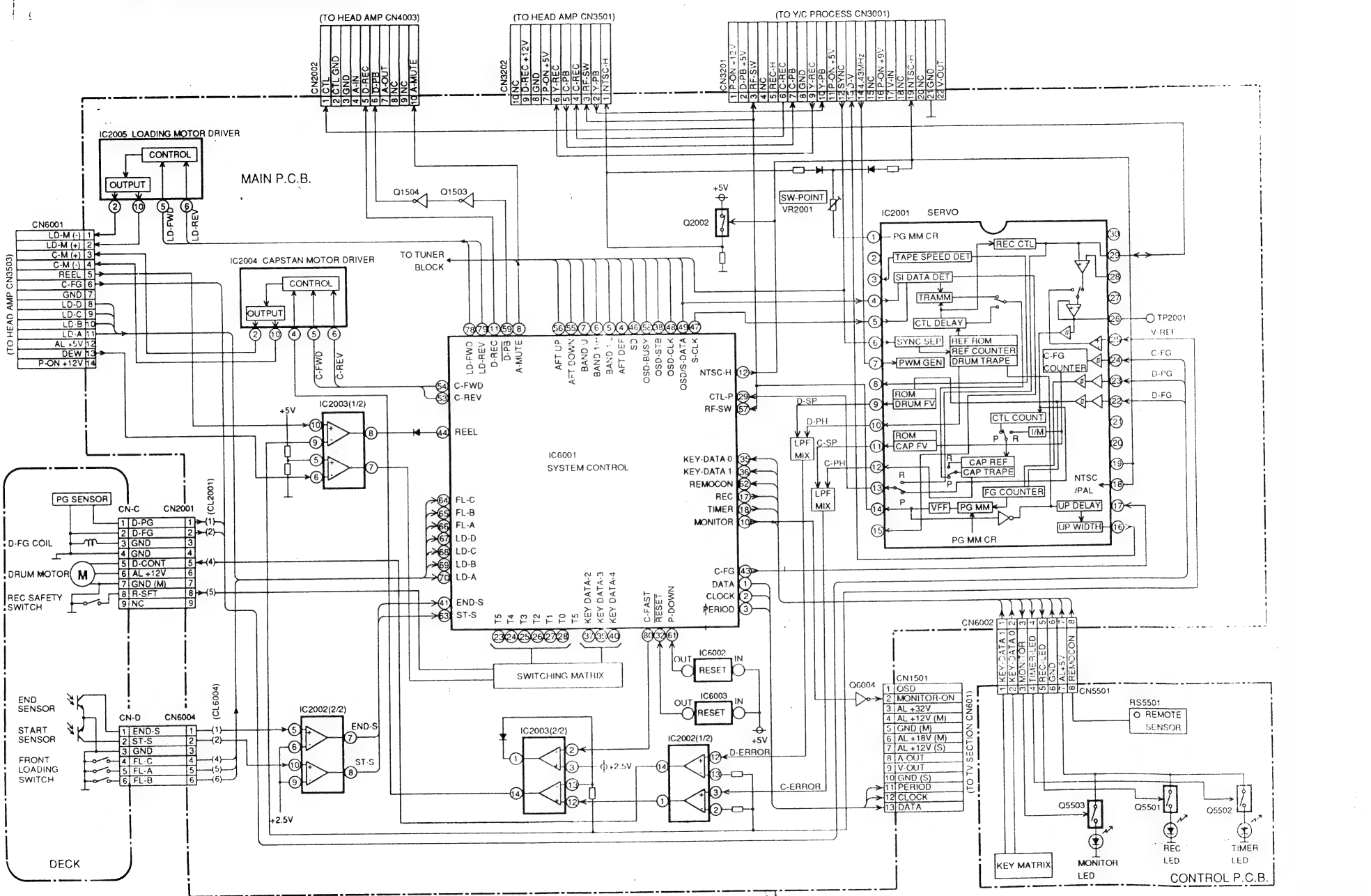
Pin No.	In/Out	Signal Name	Function
1	IN	VCC	Power Source for Interface (+5V)
2	IN	DATA IN	Control Signal (Data) from System Control/Timer IC (VCR)
3	IN	CLOCK	Control Signal (Clock) form System Control/Timer IC (VCR)
4	IN	LOAD (PERIOD)	Control Signal (Period) from System Control/Timer IC (VCR)
5	-	NC	
6	-	NC	
7	-	NC	
8	-	GND	GND
9	-	NC	
10	-	NC	
11	OUT	TINT	Chroma IC Control Signal (TINT)
12	OUT	COLOR	Chroma IC Control Signal (COLOR)
13	OUT	BRIGHT	Chroma IC Control Signal (BRIGHTNESS)
14	OUT	CONTRAST	Chroma IC Control Signal (CONTRAST)
15	OUT	VOLUME	Audio IC Control Signal (VOLUME)
16	IN	VDD	Reference Power Source (+12V)

CABINET EXPLODED VIEW [TV]



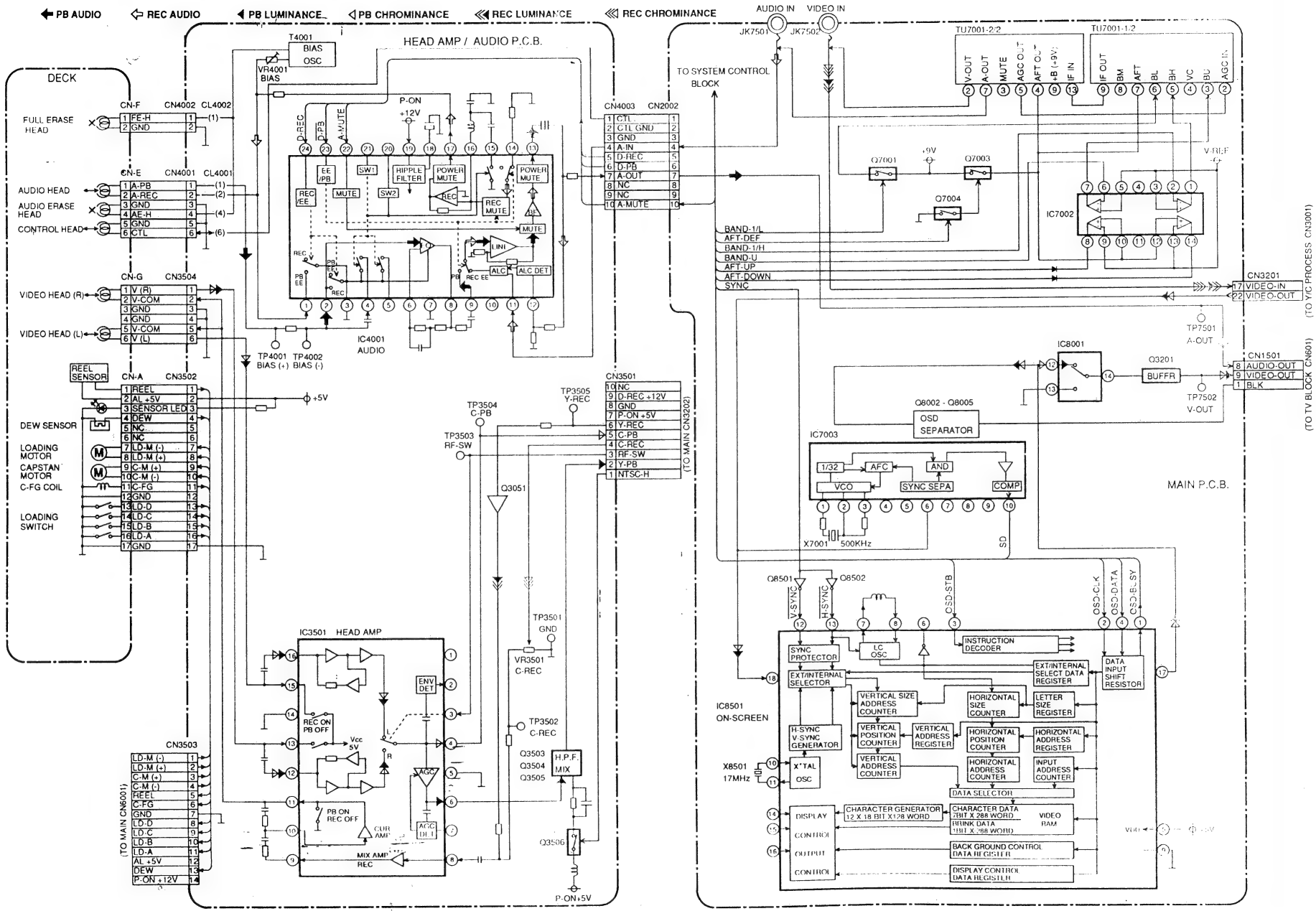
B6407EX

System Control/Servo/Control Block Diagram

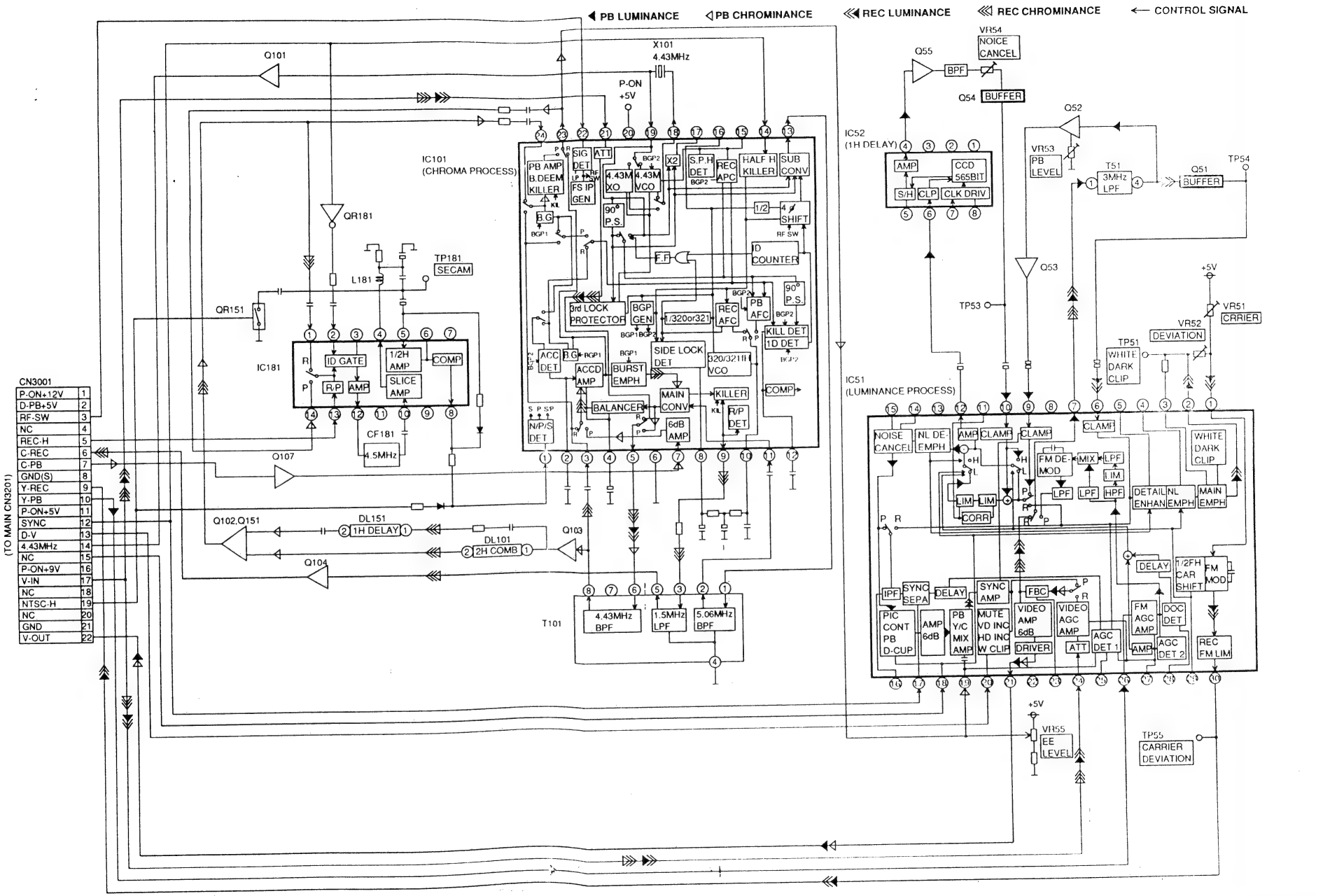


K2870BL-SYS

Head Amp/Audio/Tuner/On-Screen Block Diagram

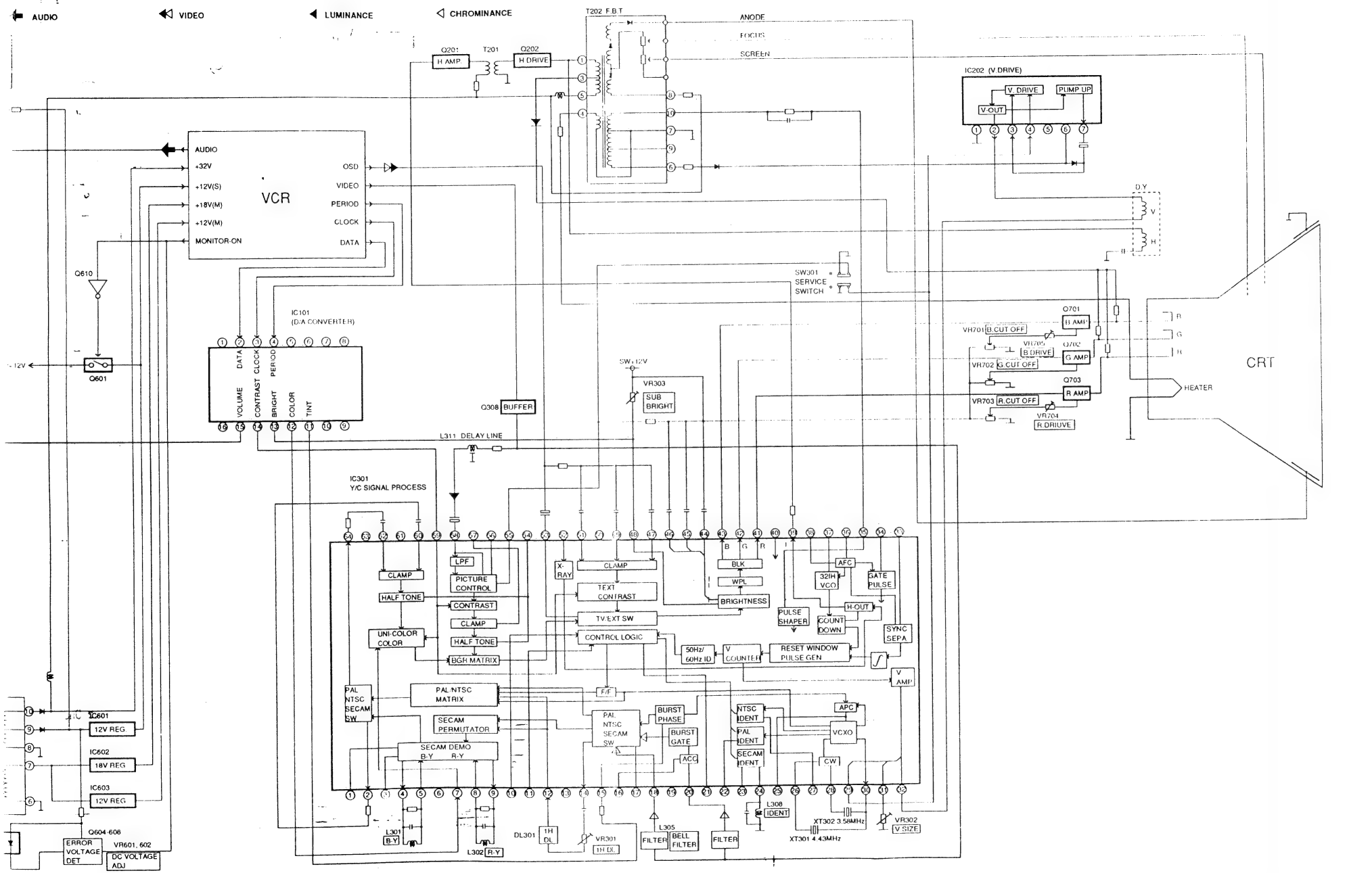


Y/C Process Block Diagram



K2370BL-Y/C

BLOCK DIAGRAMS



Ref. No.	Drawing No.	Description	Q'ty	Part No.
268	3	Spring, Take-up Soft Brake Arm	1	8059-10-06
269	3	Spring, S Soft Brake	1	8059-10-22
270	3	Washer, Polyslider, ø2.1 x ø5 x t0.5	1	9876-00-00
271	3	Spring, Trigger Lever	1	8059-10-23
272	3	Brake Actuate Base Spring	1	8059-10-10
273	3	Brake Plate Spring	1	8059-10-12
281	2	LM Assembly	1	8059-11-301
282	2	Bearing Assembly, Trigger	1	8059-11-302
283	2	Pulley, Loading	1	8059-11-03
284	2	Washer, Polyslider, ø1.6 x ø3.8 x t0.3	1	9743-00-00
285	2	Belt, Loading	1	8059-11-06
286	2	Arm (B), Search	1	8059-11-12
287	2	Washer, Polyslider, ø2.6 x ø6 x t0.5	1	9884-00-00
288	2	Gear, Loading	1	8059-11-04
289	2	Washer, Polyslider, ø2.1 x ø5 x t0.5	1	9876-00-00
290	2	Arm, Brake Actuate	1	8059-11-13
291	2	Arm, Eject Actuate	1	8059-11-14
293	2	Cam, Loading	1	8059-11-01
294	2	Brush, S	1	8059-11-02
295	2	Screw, C-tight, M3 x 4	2	9105-00-00
296	2	Washer, Polyslider, ø2.6 x ø8 x t 0.5	1	9999-03-10
312	2	Lever Semi Assembly, Loading	1	8059-12-501
313	2	Roller, Cam	1	8059-12-13
314	2	Plate, Loading Gear	1	8059-12-09
315	2	Collar, Loading Gear Plate	1	8059-12-10
316	2	Screw, C-tight, M3 x 6	1	9203-00-00
317	2	Lever Semi Assembly, Loading Actuate	1	8059-12-502
318	2	Plate, Semi Assembly, Loading Actuate	1	8059-12-503
319	2	Spring, Loading Actuate	1	8059-12-05
320	2	Plate, Loading Lever Reinforce	1	8059-12-11
321	2	Screw, Sems, M2 x 5	2	9078-00-00
322	2	Spring, L Gear Plate	1	8059-12-12
331	2	Screw, C-tight, M2.6 x 5	1	9192-00-00
332	2	Collar	1	8059-06-18
333	2	Lever, REC	1	8059-13-06
334	2	Actuator, REC	1	8059-13-07
335	2	Spoke, REC Actuate	1	8059-13-11
336	2	Sensor, DEW	1	6808-08-04
337	2	Screw, Sems, M2.6 x 4	1	9096-00-00
338	2	Plate Base	1	8059-13-307
339	2	Screw, S-tight (For Camera), M2.6 x 5	1	9803-00-00
341	1	Switch, Leaf	1	6401-01-151
342	1	Screw, C-Tight, M2.6 x 5	1	9192-00-00
343	1	Wire	2	8059-13-08
344	1	Holder, Wire	1	8059-13-10
345	1	Holder Assembly	1	8059-13-306
346	2	Spring, Rec Lever	1	8059-13-14
347	2	Collar, Screw	1	8059-13-17
361	2	Actuator, Eject	1	8059-15-08
362	2	Collar	1	8059-06-18
363	2	Screw, C-tight, M2.6 x 5	1	9192-00-00
364	2	Plate, L Brake	1	8059-15-07
365	2	Collar	1	8059-06-18
366	2	Screw, C-tight, M2.6 x 5	1	9192-00-00
367	2	Arm Assembly, E Idler (Consists of 368~370)	1	8059-15-303
368	2	Arm Semi Assembly, E Idler	1	8059-15-502
369	2	Pulley, Eject	1	8059-15-15
370	2	Washer, Polyslider, ø1.6 x ø3.8 x t0.3	1	9743-00-00
371	2	Spring, Idler Arm	1	8059-15-11

Ref. No.	Drawing No.	Description	Q'ty	Part No.
372	2	Washer, Polyslider, ø2.1 x ø6 x t0.5	1	9876-00-00
373	2	Belt, Front Loading	1	8059-15-06
390	4	Loading Assembly, Front (Consists of following)	1	8059-16-337
391	4	Bracket Assembly, Cassette Load (Consists of 392~401)	1	8059-16-318
392	4	Clutch Assembly, Front Loading	1	8059-16-319
393	4	P.C.B. Assembly, Front Loading	1	8059-16-320
394	4	Sensor P.C.B. (RM)	1	8059-16-316
395	4	Bracket Semi Assembly, Cassette Load	1	8059-16-506
396	4	Lever, IN SW	1	8059-16-34
397	4	Lever, S SW	1	8059-16-33
398	4	Bearing (A), F Worm	1	8059-16-06
399	4	Washer, Polyslider, ø1.6 x ø3.8 x t0.3	1	9743-00-00
400	4	Screw, Sems, M2.6 x 4	2	9096-00-00
401	4	Screw, Sems, M2 x 5	1	9078-00-00
411	4	Holder Assembly, Cassette (Consists of 412~417)	1	8059-16-306
412	4	Holder, Cassette	1	8000-22-03
413	4	Plate, Slide	1	8000-22-13
414	4	Plate (A), C Lock	1	8000-22-12
415	4	Collar	1	8059-06-18
416	4	Spring, Lock	1	8059-16-29
417	4	Screw, SL (For Camera), M2.6 x 3	1	9968-00-00
420	4	Angle Assembly, Front (Consists of 421~423)	1	8059-16-307
421	4	Angle, Front	1	8059-16-18
422	4	Guide (R), Tape	1	8059-16-25
423	4	Guide (L), Tape	1	8059-16-24
430	4	Plate (R) Assembly, Side (Consists of 431, 434~440)	1	8059-16-308
431	4	Plate (R), Side	1	8059-16-502
432	4	Plate, Cassette Push	1	8059-16-28
433	4	Screw (For Camera), M2.6 x 2	1	9833-00-00
434	4	Lever, Open	1	8000-22-25
435	4	Spring, Open Lever	1	8000-22-44
436	4	Lever Collar, Open	1	8000-22-42
437	4	Screw, SL (For Camera), M2 x 4	1	9967-00-00
438	4	Lever, Lock Release	1	8000-22-16
439	4	Roller, Guide	2	8000-22-75
440	4	Roller, Guide	1	8000-22-23
445	4	Plate (L) Assembly, Side (Consists of 446, 449~453)	1	8059-16-309
446	4	Plate (L), Side	1	8059-16-503
447	4	Plate, Cassette Push	1	8059-16-28
448	4	Screw (For Camera), M2.6 x 2	1	9833-00-00
449	4	Plate (L), C Lock	1	8000-22-66
450	4	Spring (L), Lock Plate	1	8059-16-30
451	4	Collar, Lock Plate	1	8000-19-63
452	4	Screw (For Camera), M2 x 2.5	1	9966-00-00
453	4	Roller, Guide	2	8000-22-75
460	4	Frame (R) Assembly (Consists of 461~462, 466, 470~472)	1	8059-16-339
461	4	Frame (R)	1	8059-16-507
462	4	Wheel Assembly, Worm (Consists of 463~465)	1	8059-16-321
463	4	Wheel, Worm	1	8059-16-36
464	4	Gear, priction	1	8059-16-45
465	4	Spring, Friction	1	8059-16-31
466	4	Gear (R) Assembly, Lift	1	8059-16-312
467	4	Gear (R), Lift	1	8000-22-15
468	4	Arm, Lift	1	8000-22-11
469	4	Spring, LP	1	8000-22-45
470	4	Guide, Open Lever	1	8000-22-26
471	4	Sleeve, Guide	1	8000-22-24
472	4	E Ring S 2.5	2	9504-00-00
480	4	Frame (L) Assembly (Consists of 481~483, 487~491)	1	8059-16-338

Ref. No.	Description	Part No.
Q304	TR. 2SC1815GRTPE2(GR) or	2SC1815GRTPE2
	TR. 2SC3331TNPAA(T) or	2SC3331TNPAA
	TR. 2SC3331UNPAA(U) or	2SC3331UNPAA
	TR. 2SC1740S(Q) (Z) or	2SC1740STPQ
	TR. 2SC1740S(R) (Z)	2SC1740STPR
Q305	TR. 2SC1815GRTPE2(GR) or	2SC1815GRTPE2
	TR. 2SC3331TNPAA(T) or	2SC3331TNPAA
	TR. 2SC3331UNPAA(U) or	2SC3331UNPAA
	TR. 2SC1740S(Q) (Z) or	2SC1740STPQ
	TR. 2SC1740S(R) (Z)	2SC1740STPR
Q306	TR. 2SC1815GRTPE2(GR) or	2SC1815GRTPE2
	TR. 2SC3331TNPAA(T) or	2SC3331TNPAA
	TR. 2SC3331UNPAA(U) or	2SC3331UNPAA
	TR. 2SC1740S(Q) (Z) or	2SC1740STPQ
	TR. 2SC1740S(R) (Z)	2SC1740STPR
Q308	TR. 2SC1815GRTPE2(GR) or	2SC1815GRTPE2
	TR. 2SC3331TNPAA(T) or	2SC3331TNPAA
	TR. 2SC3331UNPAA(U) or	2SC3331UNPAA
	TR. 2SC1740S(Q) (Z) or	2SC1740STPQ
	TR. 2SC1740S(R) (Z)	2SC1740STPR
Q501	TR. 2SK212F(F) or	2SK212F
	TR. 2SK212F(E)	2SK212E
Q510	TR. 2SC1815GRTPE2(GR) or	2SC1815GRTPE2
	TR. 2SC3331TNPAA(T) or	2SC3331TNPAA
	TR. 2SC3331UNPAA(U) or	2SC3331UNPAA
	TR. 2SC1740S(Q) (Z) or	2SC1740STPQ
	TR. 2SC1740S(R) (Z)	2SC1740STPR
Q601	TR. 2SB1274(R) or	Q2SB1274R000
	TR. 2SB1274(S)	Q2SB1274S000
Q602	TR. 2SC1815GRTPE2(GR) or	2SC1815GRTPE2
	TR. 2SC3331TNPAA(T) or	2SC3331TNPAA
	TR. 2SC3331UNPAA(U) or	2SC3331UNPAA
	TR. 2SC1740S(Q) (Z) or	2SC1740STPQ
	TR. 2SC1740S(R) (Z)	2SC1740STPR
Q603	TR. 2SC1815GRTPE2(GR) or	2SC1815GRTPE2
	TR. 2SC3331TNPAA(T) or	2SC3331TNPAA
	TR. 2SC3331UNPAA(U) or	2SC3331UNPAA
	TR. 2SC1740S(Q) (Z) or	2SC1740STPQ
	TR. 2SC1740S(R) (Z)	2SC1740STPR
Q604	TR. 2SA1318AANP(T) or	2SA1318T-AA-NP
	TR. 2SA1318AANP(U) or	2SA1318U-AA-NP
	TR. 2SA933S(R) (Z) or	2SA933RZ
	TR. 2SA933S(S) (Z)	2SA933SZ
Q605	TR. 2SC1815GRTPE2(GR) or	2SC1815GRTPE2
	TR. 2SC3331TNPAA(T) or	2SC3331TNPAA
	TR. 2SC3331UNPAA(U) or	2SC3331UNPAA
	TR. 2SC1740S(Q) (Z) or	2SC1740STPQ
	TR. 2SC1740S(R) (Z)	2SC1740STPR
Q606	TR. 2SC1815GRTPE2(GR) or	2SC1815GRTPE2
	TR. 2SC3331TNPAA(T) or	2SC3331TNPAA
	TR. 2SC3331UNPAA(U) or	2SC3331UNPAA
	TR. 2SC1740S(Q) (Z) or	2SC1740STPQ
	TR. 2SC1740S(R) (Z)	2SC1740STPR
Q607	TR. 2SC1815GRTPE2(GR) or	2SC1815GRTPE2
	TR. 2SC3331TNPAA(T) or	2SC3331TNPAA
	TR. 2SC3331UNPAA(U) or	2SC3331UNPAA
	TR. 2SC1740S(Q) (Z) or	2SC1740STPQ
	TR. 2SC1740S(R) (Z)	2SC1740STPR
Q608	TR. 2SC2271AEMP(D) or	2SC2271D-AE-MP
	TR. 2SC2271AEMP(E)	2SC2271E-AE-MP

Ref. No.	Description	Part No.
Q610	TR. 2SC1815GRTPE2(GR) or	2SC1815GRTPE2
	TR. 2SC3331TNPAA(T) or	2SC3331TNPAA
	TR. 2SC3331UNPAA(U) or	2SC3331UNPAA
	TR. 2SC1740S(Q) (Z) or	2SC1740STPQ
	TR. 2SC1740S(R) (Z)	2SC1740STPR
	RESISTORS	
R 3	CARBON RES. 1KΩ 1/6W	132A102T
R 4	CARBON RES. 10KΩ 1/6W	132A103T
R 5	CARBON RES. 3.3KΩ 1/6W	132A332T
R 6	CARBON RES. 6.8KΩ 1/6W	132A682T
R 7	CARBON RES. 1.2KΩ 1/6W	132A122T
R 8	CARBON RES. 18KΩ 1/6W	132A183T
R 9	CARBON RES. 4.7Ω 1/4W J	1345479S
R 11	FUSE RES. 2.2Ω 1W or	5363229
	FUSE RES. 2.2Ω 1W	5368229
R 12	CARBON RES. 100Ω 1/6W	132A101T
R101	CARBON RES. 68KΩ 1/6W	132A683T
R102	CARBON RES. 82KΩ 1/6W	132A823T
R103	CARBON RES. 180KΩ 1/6W	132A184T
R104	CARBON RES. 4.7KΩ 1/6W	132A472T
R106	CARBON RES. 10KΩ 1/6W	132A103T
R107	CARBON RES. 6.8KΩ 1/6W	132A682T
R109	CARBON RES. 270KΩ 1/6W	132A274T
R110	CARBON RES. 6.8KΩ 1/6W	132A682T
R111	CARBON RES. 2.7KΩ 1/6W	132A272T
R112	CARBON RES. 15KΩ 1/6W	132A153T
R113	CARBON RES. 6.8KΩ 1/6W	132A682T
R114	CARBON RES. 47KΩ 1/6W	132A473T
R115	CARBON RES. 22KΩ 1/6W	132A223T
R116	CARBON RES. 6.8KΩ 1/6W	132A682T
R117	CARBON RES. 27KΩ 1/6W	132A273T
R118	CARBON RES. 22KΩ 1/6W	132A223T
R119	CARBON RES. 6.8KΩ 1/6W	132A682T
R120	CARBON RES. 2.2KΩ 1/6W	132A222T
R121	CARBON RES. 2.2KΩ 1/6W	132A222T
R122	CARBON RES. 2.2KΩ 1/6W	132A222T
R123	CARBON RES. 1KΩ 1/6W	132A102T
R128	CARBON RES. 22KΩ 1/6W	132A223T
R129	CARBON RES. 2.2KΩ 1/6W	132A222T
R130	CARBON RES. 2.2KΩ 1/6W	132A222T
R131	CARBON RES. 2.2KΩ 1/6W	132A222T
R201	CARBON RES. 1.5KΩ 1/4W J	1345152S
R202	CARBON RES. 1.5KΩ 1/4W J	1345152S
R203	CEMENT RES. 3.3KΩ 5W or	RW05332KA006
	CEMENT RES. 3.3KΩ 5W	RW05332UB001
R204	CEMENT RES. 3.9KΩ 5W or	RW05392KA006
	CEMENT RES. 3.9KΩ 5W	RW05392UB001
R207	FUSE RES. 3.3Ω 1W or	5363339
	FUSE RES. 3.3Ω 1W	5368339
R208	CARBON RES. 150KΩ 1/6W	132A154T
R209	CARBON RES. 150KΩ 1/6W or	132A154T
	CARBON RES. 150KΩ 1/5W [for CRT701 37GDA85X-TC01(P)/ CRT701 370KRB22-TC09(SPYB)]	1324154T
R209	CARBON RES. 180KΩ 1/6W or	132A184T
	CARBON RES. 180KΩ 1/5W [for CRT701 A34KFC12XX48]	1324184T
R210	CARBON RES. 47KΩ 1/6W	132A473T
R211	CARBON RES. 120Ω 1/6W	132A121T

Ref. No.	Description	Part No.
R212	FUSE RES. 2.2Ω 1W or	5363229
	FUSE RES. 2.2Ω 1W	5368229
R213	CARBON RES. 10KΩ 1/2W	1322103
R216	CARBON RES. 82KΩ 1/6W	132A823T
R217	CARBON RES. 10KΩ 1/6W	132A103T
R218	CARBON RES. 33KΩ 1/6W	132A333T
R221	CARBON RES. 1.2KΩ 1/6W	132A122T
R223	CARBON RES. 82KΩ 1/6W	132A823T
R224	CARBON RES. 2.7KΩ 1/6W	132A272T
R225	CARBON RES. 3.3KΩ 1/6W	132A332T
R227	CARBON RES. 1Ω 1/4W J	1345109S
R228	CARBON RES. 1.2Ω 1/4W J	1345129S
R229	CARBON RES. 1KΩ 1/6W	132A102T
R230	METAL RES. 680Ω 1W	534A681
R231	FUSE RES. 68Ω 1/2W or	5362680
	FUSE RES. 68Ω 1/2W	5367680
R233	CARBON RES. 82Ω 1/6W	132A820T
R234	CARBON RES. 150KΩ 1/6W	132A154T
R301	CARBON RES. 8.2KΩ 1/6W	132A822T
R302	CARBON RES. 270Ω 1/6W	132A271T
R303	CARBON RES. 2.7KΩ 1/6W	132A272T
R304	CARBON RES. 4.7KΩ 1/6W	132A472T
R307	CARBON RES. 2.2KΩ 1/6W	132A222T
R308	CARBON RES. 1KΩ 1/6W	132A102T
R309	CARBON RES. 390Ω 1/6W	132A391T
R310	CARBON RES. 2.2KΩ 1/6W	132A222T
R312	CARBON RES. 330KΩ 1/6W	132A334T
R313	CARBON RES. 33KΩ 1/6W J	132A333
R314	CARBON RES. 15KΩ 1/6W	132A153T
R316	CARBON RES. 1KΩ 1/6W	132A102T
R317	CARBON RES. 820Ω 1/6W	132A821T
R318	CARBON RES. 27KΩ 1/6W	132A273T
R319	CARBON RES. 1.2KΩ 1/6W	132A122T
R320	CARBON RES. 1.8KΩ 1/6W	132A182T
R321	CARBON RES. 10KΩ 1/6W	132A103T
R322	CARBON RES. 8.2KΩ 1/6W	132A822T
R323	CARBON RES. 10KΩ 1/6W	132A103T
R324	CARBON RES. 10KΩ 1/6W	132A103T
R325	CARBON RES. 10KΩ 1/6W	132A103T
R326	CARBON RES. 1.2MΩ 1/6W	132A125T
R327	CARBON RES. 330KΩ 1/6W	132A334T
R329	CARBON RES. 680KΩ 1/6W	132A684T
R330	CARBON RES. 1KΩ 1/6W	132A102T
R331	CARBON RES. 18KΩ 1/6W	132A183T
R332	CARBON RES. 1KΩ 1/6W	132A102T
R333	CARBON RES. 1KΩ 1/6W	132A102T
R334	CARBON RES. 270KΩ 1/6W	132A274T
R335	CARBON RES. 120Ω 1/6W	132A121T
R336	CARBON RES. 120Ω 1/6W	132A121T
R337	CARBON RES. 10KΩ 1/6W	132A103T
R338	CARBON RES. 30KΩ 1/6W	132A303T
R339	CARBON RES. 10KΩ 1/6W	132A103T
R340	CARBON RES. 3.3KΩ 1/6W	132A332T
R341	CARBON RES. 470Ω 1/6W	132A471T
R343	CARBON RES. 10KΩ 1/6W	132A103T
R345	CARBON RES. 680Ω 1/6W	132A681T
R346	CARBON RES. 270Ω 1/6W	132A271T
R347	CARBON RES. 270Ω 1/6W	132A271T
R348	CARBON RES. 270Ω 1/6W	132A271T
R350	CARBON RES. 10KΩ 1/6W	132A103T

Ref. No.	Description	Part No.
R351	CARBON RES. 3.9KΩ 1/6W	132A392T
R355	CARBON RES. 18KΩ 1/6W	132A183T
R356	CARBON RES. 470Ω 1/6W	132A471T
R357	CARBON RES. 22KΩ 1/6W	132A223T
R359	CARBON RES. 1KΩ 1/6W	132A102T
R360	CARBON RES. 1.8KΩ 1/6W	132A182T
R361	CARBON RES. 8.2KΩ 1/6W	132A822T
R362	CARBON RES. 47KΩ 1/6W	132A473T
R363	CARBON RES. 75Ω 1/6W	132A750T
R364	CARBON RES. 1.5KΩ 1/6W	132A152T
R365	CARBON RES. 1.5KΩ 1/6W	132A152T
R366	CARBON RES. 270Ω 1/6W	132A271T
R367	CARBON RES. 8.2KΩ 1/6W	132A822T
R369	CARBON RES. 4.7KΩ 1/6W	132A472T
R371	CARBON RES. 470Ω 1/6W	132A471T
R372	CARBON RES. 4.7KΩ 1/6W	132A472T
R374	CARBON RES. 470Ω 1/6W	132A471T
R501	CEMENT RES. 1Ω 5W or	RW051R0KA004
	CEMENT RES. 1Ω 5W	RW051R0UB004
R502	CARBON RES. 1MΩ 1/4W J	1345105S
R503	METAL RES. 47KΩ 2W	534B473
R504	CARBON RES. 330Ω 1/4W J	1345331S
R505	CARBON RES. 1.2KΩ 1/4W J	1345122S
R506	CARBON RES. 330Ω 1/6W	132A331T
R508	CARBON RES. 2.2KΩ 1/4W J	1345222S
R513	CEMENT RES. 0.47Ω 5W or	RW05R47KA006
	CEMENT RES. 0.47Ω 5W or	RW05R47UB001
	CEMENT RES. 0.47Ω 5W	RW05R47PG001
R514	CARBON RES. 56Ω 1/4W J	1345560S
R515	CARBON RES. 3.3MΩ 1/4W J	1345335S
R516	CARBON RES. 1MΩ 1/4W J	1345105S
R517	CARBON RES. 10KΩ 1/6W	132A103T
R518	CARBON RES. 1.2MΩ 1/4W J	1345125S
R519	CARBON RES. 1MΩ 1/4W J	1345105S
R520	CARBON RES. 330KΩ 1/6W	132A334T
R601	METAL RES. 10Ω 2W	534B100
R602	METAL RES. 0.68Ω 1W	534A688
R603	METAL RES. 12KΩ 3W	534C123
R606	METAL RES. 10Ω 2W	534B100
R607	CARBON RES. 10KΩ 1/6W	132A103T
R608	CARBON RES. 2.2KΩ 1/4W J	1345222S
R610	METAL RES. 10Ω 2W	534B100
R612	CARBON RES. 4.7KΩ 1/6W	132A472T
R613	CARBON RES. 27KΩ 1/6W	132A273T
R614	CARBON RES. 10KΩ 1/6W	132A103T
R615	CARBON RES. 10KΩ 1/6W	132A103T
R616	CARBON RES. 15KΩ 1/6W	132A153T
R617	CARBON RES. 1KΩ 1/6W	132A102T
R618	CARBON RES. 3.9KΩ 1/6W	132A392T
R619	CARBON RES. 10KΩ 1/6W	132A103T
R620	CARBON RES. 6.8KΩ 1/6W	132A682T
R621	CARBON RES. 33KΩ 1/6W	132A333T
R622	CARBON RES. 100KΩ 1/6W	132A104T
R623	CARBON RES. 3.9KΩ 1/6W	132A392T
R625	CARBON RES. 6.8KΩ 1/6W	132A682T
R627	CARBON RES. 33KΩ 1/4W J	1345333S
R628	CARBON RES. 27KΩ 1/4W J	1345273S
R629	CARBON RES. 33KΩ 1/6W	132A333T
R630	CARBON RES. 56KΩ 1/6W	132A563T
R631	CARBON RES. 1KΩ 1/6W	132A102T

Ref. No.	Description	Part No.
C230	*MYLAR CAP. 0.0027μF/50V	6250272
C301	CERAMIC CAP. 180pF/50V CH	12CH181S
C302	CERAMIC CAP. 180pF/50V CH	12CH181S
C303	CERAMIC CAP. 180pF/50V CH	12CH181S
C304	CERAMIC CAP. 7pF/50V CH	12CH709S
C305	ELECTROLYTIC CAP. 1μF/50V	126F105S
C306	ELECTROLYTIC CAP. 220μF/16V	626C227S
C307	CERAMIC CAP. 0.01μF/50V FZ or	12F3103S
	CERAMIC CAP. 0.01μF/50V FZ	3F45103S
C308	SERAMIC CAP. 0.056μF/25V (K)	12Y2563
C309	CERAMIC CAP. 8pF/50V CH	12CH809S
C310	CERAMIC CAP. 0.01μF/50V FZ or	12F3103S
	CERAMIC CAP. 0.01μF/50V FZ	3F45103S
C311	CERAMIC CAP. 0.01μF/50V FZ or	12F3103S
	CERAMIC CAP. 0.01μF/50V FZ	3F45103S
C312	ELECTROLYTIC CAP. 10μF/50V	126F106S
C313	CERAMIC CAP. 0.01μF/50V FZ or	12F3103S
	CERAMIC CAP. 0.01μF/50V FZ	3F45103S
C314	ELECTROLYTIC CAP. 0.47μF/50V	126F474S
C315	CERAMIC CAP. 180pF/50V CH	12CH181S
C316	CERAMIC CAP. 18pF/50V SL	1270180S
C319	SEMICONDUCTOR CAP. 0.056μF/25V K	12Y2563S
C320	SEMICONDUCTOR CAP. 0.1μF/25V K	12Y2104S
C321	CERAMIC CAP. 0.01μF/50V FZ or	12F3103S
	CERAMIC CAP. 0.01μF/50V FZ	3F45103S
C322	CERAMIC CAP. 0.01μF/50V FZ or	12F3103S
	CERAMIC CAP. 0.01μF/50V FZ	3F45103S
C323	CERAMIC CAP. 0.01μF/50V FZ or	12F3103S
	CERAMIC CAP. 0.01μF/50V FZ	3F45103S
C324	ELECTROLYTIC CAP. 2.2μF/50V NP	126X225S
C327	SEMICONDUCTOR CAP. 0.056μF/25V K	12Y2563S
C328	CERAMIC CAP. 27pF/50V CH	12CH270S
C329	CERAMIC CAP. 33pF/50V CH	12CH330S
C330	ELECTROLYTIC CAP. 1μF/50V	126F105S
C331	CERAMIC CAP. 0.01μF/50V FZ or	12F3103S
	CERAMIC CAP. 0.01μF/50V FZ	3F45103S
C332	CERAMIC CAP. 0.01μF/50V FZ or	12F3103S
	CERAMIC CAP. 0.01μF/50V FZ	3F45103S
C333	CERAMIC CAP. 0.0027μF/50V YB or	12B3272S
	CERAMIC CAP. 0.0027μF/50V X	3X4C272T
C334	ELECTROLYTIC CAP. 0.47μF/50V NP	126X474S
C335	CERAMIC CAP. 220pF/50V CH	12CH221S
C336	ELECTROLYTIC CAP. 3.3μF/50V	126F335S
C337	*MYLAR CAP. 0.022μF/50V	1250223S
C338	SEMICONDUCTOR CAP. 0.022μF/25V K	12Y2223S
C339	SEMICONDUCTOR CAP. 0.022μF/25V K	12Y2223S
C340	CERAMIC CAP. 220pF/50V YB or	12B3221S
	CERAMIC CAP. 220pF/50V YB	3B42221T
C341	ELECTROLYTIC CAP. 10μF/50V	126F106S
C342	CERAMIC CAP. 0.01μF/50V FZ or	12F3103S
	CERAMIC CAP. 0.01μF/50V FZ	3F45103S
C343	ELECTROLYTIC CAP. 0.47μF/50V	126F474
C344	ELECTROLYTIC CAP. 0.47μF/50V	126F474
C345	ELECTROLYTIC CAP. 0.47μF/50V	126F474
C346	ELECTROLYTIC CAP. 0.47μF/50V NP	126X474S
C347	ELECTROLYTIC CAP. 10μF/50V	126F106S
C348	ELECTROLYTIC CAP. 0.47μF/50V NP	126X474S
C349	ELECTROLYTIC CAP. 0.47μF/50V NP	126X474S
C350	ELECTROLYTIC CAP. 47μF/50V	126F476S

Ref. No.	Description	Part No.
C351	CERAMIC CAP. 0.01μF/50V FZ or	12F3103S
	CERAMIC CAP. 0.01μF/50V FZ	3F45103S
C352	SEMICONDUCTOR CAP. 0.1μF/25V K	12Y2104S
C353	ELECTROLYTIC CAP. 2.2μF/50V	126F225S
C355	ELECTROLYTIC CAP. 10μF/50V	126F106S
C356	SEMICONDUCTOR CAP. 0.1μF/25V K	12Y2104S
C357	ELECTROLYTIC CAP. 10μF/50V	126F106S
C358	SEMICONDUCTOR CAP. 0.1μF/25V K	12Y2104S
C359	CERAMIC CAP. 180pF/50V CH	12CH181S
C362	ELECTROLYTIC CAP. 100μF/16V	126C107S
C364	ELECTROLYTIC CAP. 10μF/50V	126F106S
C365	SEMICONDUCTOR CAP. 0.056μF/25V K	12Y2563S
C366	CERAMIC CAP. 33pF/50V SL	1270330S
C367	SEMICONDUCTOR CAP. 0.022μF/50V Z	1294223S
C501 ⚠	LINE ACROSS 0.1μF/250V or	1220756
	LINE ACROSS 0.1μF/250V or	122Z181
	LINE ACROSS 0.1μF/250V	CT2E104KF005
C502 ⚠	LINE ACROSS 0.1μF/250V or	1220756
	LINE ACROSS 0.1μF/250V or	122Z181
	LINE ACROSS 0.1μF/250V	CT2E104KF005
C505	CERAMIC CAP. 0.0047μF AC125V or	CCG2HZP0Z472
	CERAMIC CAP. 0.0047μF AC125V	6220353
C506	CERAMIC CAP. 0.0047μF AC125V or	CCG2HZP0Z472
	CERAMIC CAP. 0.0047μF AC125V	6220353
C507	CERAMIC CAP. 0.0047μF AC125V or	CCG2HZP0Z472
	CERAMIC CAP. 0.0047μF AC125V	6220353
C508	CERAMIC CAP. 0.0047μF AC125V or	CCG2HZP0Z472
	CERAMIC CAP. 0.0047μF AC125V	6220353
C509	ELECTROLYTIC CAP. 150μF/400V or	1220891
	ELECTROLYTIC CAP. 150μF/400V or	1220693
	ELECTROLYTIC CAP. 150μF/400V or	122Z020
	ELECTROLYTIC CAP. 150μF/400V	122Z738
C510	CERAMIC CAP. 0.01μF/1KV or	CCD3AKP0B103
	CERAMIC CAP. 0.01μF/1KV	6220358
C513	*MYLAR CAP. 0.0022μF/50V	1250222S
C514	*MYLAR CAP. 0.082μF/50V	1250823S
C515	CERAMIC CAP. 2200pF/50V YB	12B3222S
C517	ELECTROLYTIC CAP. 470μF/10V	126B477S
C518	CERAMIC CAP. 0.001μF/1KV or	CCD3AKP0B102
	CERAMIC CAP. 0.001μF/1KV	6220574
C519	CERAMIC CAP. 56pF/50V SL	1270560S
C520	*MYLAR CAP. 0.1μF/400V or	CMA2HKD00104
	*MYLAR CAP. 0.1μF/400V or	CT2H104NC001
	*MYLAR CAP. 0.1μF/400V	CT2H104MS009
C521	CERAMIC CAP. 0.0022μF/4KV or	CCN2HP0E222
	CERAMIC CAP. 0.0022μF/4KV	122Z011
C523	ELECTROLYTIC CAP. 470μF/10V	126B477S
C524	ELECTROLYTIC CAP. 47μF/10V	126B476S
C602	CERAMIC CAP. 470pF/1KV or	CCD3AKP0B471
	CERAMIC CAP. 470pF/1KV	6220487
C603	ELECTROLYTIC CAP. 100μF/160V	622Z737
C605	ELECTROLYTIC CAP. 47μF/160V or	122Z336
	ELECTROLYTIC CAP. 47μF/160V or	CE2CMZDDL470
	ELECTROLYTIC CAP. 47μF/160V	CE2CMZNTL470
C606	CERAMIC CAP. 1000pF/50V YB or	12B3102S
	CERAMIC CAP. 1000pF/50V YB	3B42102T
C607	CERAMIC CAP. 1000pF/50V YB or	12B3102S
	CERAMIC CAP. 1000pF/50V YB	3B42102T
C608	ELECTROLYTIC CAP. 4700μF/25V or	CE1EMZNTL472
	ELECTROLYTIC CAP. 4700μF/25V	626D478

Ref. No.	Description	Part No.
C609	ELECTROLYTIC CAP. 2200μF/25V or	CE1EMZNTL222
	ELECTROLYTIC CAP. 2200μF/25V	626D228
C610	ELECTROLYTIC CAP. 470μF/16V or	CE1CMZNTL471
	ELECTROLYTIC CAP. 470μF/16V	626C477
C611	CERAMIC CAP. 1000pF/50V YB or	12B3102S
	CERAMIC CAP. 1000pF/50V YB	3B42102T
C612	CERAMIC CAP. 1000pF/50V YB or	12B3102S
	CERAMIC CAP. 1000pF/50V YB	3B42102T
C613	ELECTROLYTIC CAP. 4700μF/25V or	CE1EMZNTL472
	ELECTROLYTIC CAP. 4700μF/25V	626D478
C614	ELECTROLYTIC CAP. 470μF/25V or	CE1EMZNTL471
	ELECTROLYTIC CAP. 470μF/25V	626D477
C615	ELECTROLYTIC CAP. 330μF/10V	126B337S
C616	ELECTROLYTIC CAP. 470μF/16V or	CE1CMZNTL471
	ELECTROLYTIC CAP. 470μF/16V	626C477
C617	CERAMIC CAP. 1000pF/50V YB or	12B3102S
	CERAMIC CAP. 1000pF/50V YB	3B42102T
DIODES		
D102	DIODE MTZ5.1BT	MTZ5.1BT
D103	DIODE 1SS176TPA7 or	1SS176TPA7
	DIODE 1SS133T	1SS133T
D104	DIODE MTZ5.6BT	MTZ5.6B
D201	DIODE ERB44-08 L3	AERB4408L300
D203	DIODE ERB44-08 L3	AERB4408L300
D204	DIODE 1SS130T	1SS130T
D205	DIODE AERA15C2KFRB	QDNZ0ERA1502
D206	DIODE ERB44-08 L3	AERB4408L300
D301	DIODE MTZ7.5BT	MTZ7.5BT
D302	DIODE MTZ9.1BT	MTZ9.1BT
D303	DIODE MTZ12BT	MTZ12BT
D304	DIODE MTZ9.1BT	MTZ9.1BT
D501	DIODE ERC04-10 L3	QDDZ0ERC0410
D502	DIODE ERC04-10 L3	QDDZ0ERC0410
D503	DIODE ERC04-10 L3	QDDZ0ERC0410
D504	DIODE ERC04-10 L3	QDDZ0ERC0410
D505	DIODE 1SS176TPA7 or	1SS176TPA7
	DIODE 1SS133T	1SS133T
D506	DIODE 1SS176TPA7 or	1SS176TPA7
	DIODE 1SS133T	1SS133T
D507	DIODE ERB44-06 L3	AERB4406L300
D508	DIODE ERB44-06 L3	AERB4406L300
D601	DIODE ERD38-06 L	AERD3806L000
D603	DIODE ERD32-02 L	AERD3202L000
D604	DIODE 1SS176TPA7 or	1SS176TPA7
	DIODE 1SS133T	1SS133T
D605	DIODE ERD32-02 L	AERD3202L000
D606	DIODE 1SS176TPA7 or	1SS176TPA7
	DIODE 1SS133T	1SS133T
D607	DIODE 1SS176TPA7 or	1SS176TPA7
	DIODE 1SS133T	1SS133T
D608	DIODE 1SS176TPA7 or	1SS176TPA7
	DIODE 1SS133T	1SS133T
D609	DIODE 1SS176TPA7 or	1SS176TPA7
	DIODE 1SS133T	1SS133T
D610	DIODE 1SS176TPA7 or	1SS176TPA7
	DIODE 1SS133T	1SS133T
D611	DIODE 1SS176TPA7 or	1SS176TPA7
	DIODE 1SS133T	1SS133T
D612	DIODE 1SS130T	1SS130T
D613	DIODE MTZ6.8BT	MTZ6.8BT

Ref. No.	Description	Part No.
D614	DIODE R2M or	QDDZ00000R2M
	DIODE EQB01-150	AEQB01150000
D620	DIODE 1SS176TPA7 or	1SS176TPA7
	DIODE 1SS133T	1SS133T
D621	DIODE 1SS176TPA7 or	1SS176TPA7
	DIODE 1SS133T	1SS133T
ICS		
IC 1	IC AN5265	14LN160
IC101	IC μPD6326C	14DV727
IC202	IC LA7830	14LQ163
IC301	IC TA8759AN	GTA8759AN
IC501 ⚠	IC STK73907	GSTK73907000
IC502 ⚠	PHOTO COUPLER PS2651 or	QPEZ00PS2651
	PHOTO COUPLER PC-113AB	QPE1000PC113
IC601	IC AN7812 or	AN7812
	IC AN7812F	AN7812F
IC602	IC AN7818 or	AN7818
	IC AN7818F	AN7818F
IC603	IC AN7812 or	AN7812
	IC AN7812F	AN7812F
COILS		
L201	POT TYPE COIL 4.7mH	117M957
L203	POT TYPE COIL 47μH	117M511
L301	CASING COIL (R-Y, B-Y)	113M872
L302	CASING COIL (R-Y, B-Y)	113M872
L303	CASING COIL (PAL ADJ.)	113M855
L304	MICRO INDUCTOR 8.2μH or	2165829T
	MICRO INDUCTOR 8.2μH	2162823T
L305	CASING COIL (BEL FILTER)	113M873
L306	MICRO INDUCTOR 47μH or	2165470T
	MICRO INDUCTOR 47μH	2162470T
L308	CASING COIL (I-DENT)	113M871
L311	DELAY LINE or	113M852
	DELAY LINE	LFB10VCSF001
L501 ⚠	LINE FILTER or	LLBG00ZMS008
	LINE FILTER	LLBG00ZBW007
L502 ⚠	LINE FILTER or	LLBG00ZMS008
	LINE FILTER	LLBG00ZBW007
L601	POT TYPE COIL 47μH	117M511
L602	POT TYPE COIL 47μH	117M511
TRANSISTORS		
Q 1	TR. 2SC1815GRTPE2(GR) or	2SC1815GRTPE2
	TR. 2SC3331TNPAA(T) or	2SC3331TNPAA
	TR. 2SC3331UNPAA(U) or	2SC3331UNPAA
	TR. 2SC1740S(O) (Z) or	2SC1740STPQ
	TR. 2SC1740S(R) (Z)	2SC1740STPR
Q201	TR. 2SC2271AEMP(D) or	2SC2271D-AE-MP
	TR. 2SC2271AEMP(E)	2SC2271E-AE-MP
Q202 ⚠	TRANSISTOR 2SD1397	Q2SD1397CA
Q302	TR. 2SA1318AANP(T) or	2SA1318T-AA-NP
	TR. 2SA1318AANP(U) or	2SA1318U-AA-NP
	TR. 2SA933S(R) (Z) or	2SA933RZ
	TR. 2SA933S(S) (Z)	2SA933SZ
Q303	TR. 2SA1318AANP(T) or	2SA1318T-AA-NP
	TR. 2SA1318AANP(U) or	2SA1318U-AA-NP
	TR. 2SA933S(R) (Z) or	2SA933RZ
	TR. 2SA933S(S) (Z)	2SA933SZ

Ref. No.	Drawing No.	Description	Q'ty	Part No.
481	4	Frame (L)	1	8059-16-508
482	4	Sensor, P.C.B. (LM)	1	8059-16-301
483	4	Gear (L) Assembly, Lift (Consists of 484~486)	1	8059-16-314
484	4	Gear, Lift	1	8000-22-14
485	4	Arm, Lift	1	8000-22-11
486	4	Spring, LP	1	8000-22-45
487	4	Lever, Lift	1	8059-16-67
488	4	Spring, Lift Lever	1	8059-16-68
489	4	E-Ring S 2.5	1	9504-00-00
490	4	Screw, Sems, M2.6 x 7	1	9099-00-00
491	4	Sleeve, Guide	1	8000-22-24
498	4	Stay, Top	1	8000-22-65
499	4	Wire, End Sensor	1	8059-16-19
500	4	Angle, Rear	1	8059-16-09
501	4	Plate, Upper	1	8059-16-66
502	4	Shaft, Synchronize	1	8059-16-60
503	4	Gear (A), Synchronize	2	8059-16-17
504	4	E-Ring S 2.5	2	9504-00-00
505	4	Screw, Sems, M2.6 x 4	10	9096-00-00
506	4	Screw (For Camera), M2.6 x 3	2	9556-00-00
507	4	Screw (For Camera), M2.3 x 2.5	2	9991-00-00
508	4	Screw, C-Tight, M2.6 x 5	4	9192-00-00
531	3	Plate, RG Slide	1	8059-17-03
532	3	Spring, RG Slide	1	8059-17-11
533	3	Collar, RG Slide Plate	1	8059-17-10
534	3	Screw, Sems, M2 x 4	1	9077-00-00
535	3	Base, RG Slide	1	8059-17-09
536	3	Arm Semi Assembly, RG	1	8059-17-502
537	3	Washer, Polyslider, ø2.6 x ø6 x t0.5	1	9884-00-00
538	3	Arm, RG Actuate	1	8059-17-01
539	3	Washer, Polyslider, ø2.1 x ø5 x t0.5	1	9876-00-00
540	3	RG Actuator	1	8059-17-02

ELECTRICAL REPLACEMENT PARTS LIST [TV]

PRODUCT SAFETY NOTE: Products marked with a ⚠ have special characteristics important to safety. Before replacing any of these components, read carefully the product safety notice of this service manual. Don't degrade the safety of the product through improper servicing.

GENERAL NOTE: "C.B.A." is abbreviation for "Printed Circuit Board Assembly".
NOTE: Parts that not assigned part numbers (----------) are not available.

Tolerance of Capacitors and Resistors are noted with the following symbols.

C.....±0.25%
D.....±0.5%
F.....±1%
G.....±2%
J.....±5%
K.....±10%
M.....±20%
N.....±30%
Z.....+80/-20%
X.....+40/-20%
P.....+100%

MMA-78 C.B.A.

Ref. No.	Description	Part No.
	MMA-78 C.B.A. Consists of the following :	**MMA-78**
⚠	P.C.B.	BB6400F01001
	MAIN C.B.A.	----------
	CRT C.B.A.	----------
	EARPHONE C.B.A.	----------

MAIN C.B.A.

Ref. No.	Description	Part No.
	MAIN C.B.A. Consists of the following :	----------
	CAPACITORS	
C 1	ELECTROLYTIC CAP. 1µF/50V	126F105S
C 2	SEMICONDUCTOR CAP. 0.0039µF 25V K	12Y2392S
C 3	ELECTROLYTIC CAP. 1µF/50V	126F105S
C 4	ELECTROLYTIC CAP. 10µF/50V	126F106S
C 5	ELECTROLYTIC CAP. 10µF/50V	126F106S
C 6	SEMICONDUCTOR CAP. 0.068µF/25V K	12Y2683S
C 7	SEMICONDUCTOR CAP. 0.15µF/50V Z	1294154S
C 8	ELECTROLYTIC CAP. 470µF/16V or	CE1CMZNTL471
	ELECTROLYTIC CAP. 470µF/16V	626C477
C 9	ELECTROLYTIC CAP. 2200µF/25V or	CE1EMZNTL222
	ELECTROLYTIC CAP. 2200µF/25V	626D228
C 12	ELECTROLYTIC CAP. 470µF/16V or	CE1CMZNTL471
	ELECTROLYTIC CAP. 470µF/16V	626C477
C101	ELECTROLYTIC CAP. 10µF/50V	126F106S
C102	CERAMIC CAP. 0.01µF/50V FZ or	12F3103S
	CERAMIC CAP. 0.01µF/50V FZ	3F45103S
C103	ELECTROLYTIC CAP. 10µF/50V	126F106S
C104	CERAMIC CAP. 220pF/50V SL	1270221S
C105	CERAMIC CAP. 220pF/50V SL	1270221S
C106	CERAMIC CAP. 220pF/50V SL	1270221S
C201	CERAMIC CAP. 0.0022µF/1KV or	CCD3AKP0B222
	CERAMIC CAP. 0.0022µF/1KV	6220576
C202	CERAMIC CAP. 0.0022µF/1KV or	CCD3AKP0B222
	CERAMIC CAP. 0.0022µF/1KV	6220576
C203	P.P. CAP. 0.0068µF/1.6KV or	122Z285
	P.P. CAP. 0.0068µF/1.6KV	1220498
C205	ELECTROLYTIC CAP. 22µF/250V or	122Z345
	ELECTROLYTIC CAP. 22µF/250V or	CE2EMZDDL220
	ELECTROLYTIC CAP. 22µF/250V	CE2EMZNTL220
C206	ELECTROLYTIC CAP. 22µF/160V or	122Z334
	ELECTROLYTIC CAP. 22µF/160V or	CE2CMZNTL220
	ELECTROLYTIC CAP. 22µF/160V	6220758
C208	CERAMIC CAP. 82pF/500V SL or	CCD2JKSSL820
	CERAMIC CAP. 82pF/500V SL	122Z777
C209	ELECTROLYTIC CAP. 330µF/35V or	CE1GMZNTL331
	ELECTROLYTIC CAP. 330µF/35V	626E337
C210	*MYLAR CAP. 0.1µF/50V	1250104S
C211	*MYLAR CAP. 0.0012µF/50V	1250122S
C212	CERAMIC CAP. 47pF/50V SL	1270470S
C213	*MYLAR CAP. 0.001µF/50V	1250102S
C214	ELECTROLYTIC CAP. 100µF/35V	126E107S
C215	*MYLAR CAP. 0.1µF/50V	1250104S
C216	TANTAL CAP. 2.2µF/25V	122F225
C217	ELECTROLYTIC CAP. 10µF/50V	126F106S
C218	ELECTROLYTIC CAP. 2200µF/16V or	CE1CMZNTL222
	ELECTROLYTIC CAP. 2200µF/16V	626C228
C219	*MYLAR CAP. 0.18µF/50V	625U184
C220	P.P. CAP. 0.47µF/200V or	122Z256
	P.P. CAP. 0.47µF/200V	1220511
C221	ELECTROLYTIC CAP. 1µF/250V	CA2E010NC009
C226	ELECTROLYTIC CAP. 2200µF/16V or	CE1CMZNTL222
	ELECTROLYTIC CAP. 2200µF/16V	626C228
C227	ELECTROLYTIC CAP. 2.2µF/160V or	122Z330
	ELECTROLYTIC CAP. 2.2µF/160V or	CE2CMZDDL2R2
	ELECTROLYTIC CAP. 2.2µF/160V	CE2CMZNTL2R2
C228	ELECTROLYTIC CAP. 2.2µF/160V or	122Z330
	ELECTROLYTIC CAP. 2.2µF/160V or	CE2CMZDDL2R2
	ELECTROLYTIC CAP. 2.2µF/160V	CE2CMZNTL2R2
C229	CERAMIC CAP. 0.01µF/50V FZ or	12F3103S
	CERAMIC CAP. 0.01µF/50V FZ	3F45103S

*MYLAR is a registered trademark of E. I. Du Pont de Nemours and Company.

	Description	Part No.
R 8015	CARBON RES. 1/5W J 3.3K Ω or	1324332T
	CARBON RES. 1/6W J 3.3K Ω or	132A332T
	CARBON RES. 1/4W J 3.3K Ω	RCX4JATZ0332
R 8016	CARBON RES. 1/5W J 1.5K Ω or	1324152T
	CARBON RES. 1/6W J 1.5K Ω or	132A152T
	CARBON RES. 1/4W J 1.5K Ω	RCX4JATZ0152
R 8501	CARBON RES. 1/5W J 3.3K Ω or	1324332T
	CARBON RES. 1/6W J 3.3K Ω or	132A332T
	CARBON RES. 1/4W J 3.3K Ω	RCX4JATZ0332
R 8502	CARBON RES. 1/5W J 4.7K Ω or	1324472T
	CARBON RES. 1/6W J 4.7K Ω or	132A472T
	CARBON RES. 1/4W J 4.7K Ω	RCX4JATZ0472
R 8503	CARBON RES. 1/5W J 2.7K Ω or	1324272T
	CARBON RES. 1/6W J 2.7K Ω or	132A272T
	CARBON RES. 1/4W J 2.7K Ω	RCX4JATZ0272
R 8504	CARBON RES. 1/5W J 3.9K Ω or	1324392T
	CARBON RES. 1/6W J 3.9K Ω or	132A392T
	CARBON RES. 1/4W J 3.9K Ω	RCX4JATZ0392
R 8505	CARBON RES. 1/5W J 2.2K Ω or	1324222T
	CARBON RES. 1/6W J 2.2K Ω or	132A222T
	CARBON RES. 1/4W J 2.2K Ω	RCX4JATZ0222
R 8506	CARBON RES. 1/5W J 4.7K Ω or	1324472T
	CARBON RES. 1/6W J 4.7K Ω or	132A472T
	CARBON RES. 1/4W J 4.7K Ω	RCX4JATZ0472
R 8507	CARBON RES. 1/5W J 1.5K Ω or	1324152T
	CARBON RES. 1/6W J 1.5K Ω or	132A152T
	CARBON RES. 1/4W J 1.5K Ω	RCX4JATZ0152
R 8508	CARBON RES. 1/5W J 4.7K Ω or	1324472T
	CARBON RES. 1/6W J 4.7K Ω or	132A472T
	CARBON RES. 1/4W J 4.7K Ω	RCX4JATZ0472
R 8509	CARBON RES. 1/5W J 470 Ω or	1324471T
	CARBON RES. 1/6W J 470 Ω or	132A471T
	CARBON RES. 1/4W J 470 Ω	RCX4JATZ0471
	CARBON RES. 1/5W J 10K Ω	1324103T
	VOLUMES	
VR2001	CARBON P.O.T. 100K Ω or	238A402Y
	CARBON P.O.T. 100K Ω or	238N497Y
	CARBON P.O.T. 100K Ω	238A427Y
VR8002	CARBON P.O.T. 2.2K Ω or	238A392Y
	CARBON P.O.T. 2K Ω or	238N490Y
	CARBON P.O.T. 2K Ω	238A420Y
	MISCELLANEOUS	
2L-041	SCREW TAPPING BIND HEAD M3X10	DBM13100
A-19	JACK BOARD K2870RA	0VM201044
B2-3	HEATSINK IC VD40308/K1000U6	6S50527
B2-21	PLATE GROUND K2870RA	0VM403988
A-A	WIRE 070/WHI/AWG26#1007	0VE400150
B-B	WIRE 070/WHI/AWG26#1007	0VE400150
C-C	WIRE 120/RED/AWG26#1007	0VE400367
D-D	WIRE 050/BLU/AWG26#1007	0VE400368
JK7501	RCA JACK(WHITE) JPJ1023-01-0300	1780076
JK7502	BNC JACK HXC0330-01-010	1780271
JK7503	ANT JACK TCR-RCA-2V or	1780217
	ANT JACK HXC0421-01-500	1780292
TP7501	TEST PIN RT-01T-1.3B	1720688
TP7502	TEST PIN RT-01T-1.3B	1720688
TP8001	TEST PIN RT-01T-1.3B	1720688
TU7001	TUNER UNIT TUFNF3H-292P1	1813629
X 6002	X'TAL 32KHz (10PPM) or	1811350
	X'TAL 32KHz (10PPM)	1811351
X 8501	X'TAL 17.734476MHz	FXD176TFS001
X 7001	CERAMIC RESONATOR 500KHZ CSB500E	1810414
X 6001	CERALOCK 4.19MHz	1812885
	WIRE 160/BLA/AWG26#1007	WX1K2870-006
	WIRE 060/ORE/AWG26#1007	WX3301A65F09
	WIRE 055/PUR/AWG26#1007	WX3701A64F06
	WIRE 135/WHI/AWG26#1007	WX3901A64F14
	WIRE 150/WHI/AWG26#3265	WX3901664F16
	NON WOVEN FABRICS S2291	0VM401388
	HEAT SINK ASS'Y JP380/2870/MCV	0VSA04935
	RCA PLUG CORD	5750117
	DIODE 1SS254 or	A1SS254*****
	DIODE GMB01B	GMB01B

MCV-B C.B.A. (Cass. SW. / Sensor Conn.)

Ref. No.	Description	Part No.
	MCV-B C.B.A.	----------
	Consists of the following :	
CN6004	STRAIGHT PIN CONNECTOR 6P	1770626
	IL-SDA- 6P-S2T2	

MCV-C C.B.A. (Drum Deck Conn.)

Ref. No.	Description	Part No.
	MCV-C C.B.A.	----------
	Consists of the following :	
CN2001	ANGLE SOCKET CONNECTOR 9P	1770604
	IL-SDA- 9S-S2L2	

MCV-D C.B.A. (Head Amp / Audio)

Ref. No.	Description	Part No.
	MCV-D C.B.A.	----------
	Consists of the following :	
	CAPACITORS	
C 3501	CERAMIC CAP. Y M 0.01μF/16V or	3Y4D103T
	CERAMIC CAP. F Z 0.01μF/16V	1220842T
C 3502	CERAMIC CAP. SL J 68pF/50V	3S41680T
C 3503	CERAMIC CAP. B J 150pF/50V	3B41151T
C 3504	CERAMIC CAP. SL J 47pF/50V	3S41470T
C 3505	CERAMIC CAP. SL J 10pF/50V	3S41100T
C 3506	CERAMIC CAP. F Z 0.022μF/25V or	122Z122T
	CERAMIC CAP. F Z 0.022μF/25V	1220843T
C 3507	CERAMIC CAP. Y M 0.01μF/16V or	3Y4D103T
	CERAMIC CAP. F Z 0.01μF/16V	1220842T
C 3510	CERAMIC CAP. SL J 33pF/50V	3S41330T
C 3511	CERAMIC CAP. SL J 56pF/50V	3S41560T
C 3512	CERAMIC CAP. SL J 18pF/50V	3S41180T
C 3513	CERAMIC CAP. SL J 18pF/50V	3S41180T
C 3514	CERAMIC CAP. F Z 0.022μF/25V or	122Z122T
	CERAMIC CAP. F Z 0.022μF/25V	1220843T
C 3515	ELECTROLYTIC CAP. 100μF/6.3V M H7	526R107S
C 3516	ELECTROLYTIC CAP. 0.22μF/50V M H7	526W224S
C 3517	CERAMIC CAP. Y M 0.01μF/16V or	3Y4D103T
	CERAMIC CAP. F Z 0.01μF/16V	1220842T
C 3519	CERAMIC CAP. F Z 0.1μF/50V	3F40104T
C 3520	CERAMIC CAP. F Z 0.1μF/50V	3F40104T
C 3522	CERAMIC CAP. Y M 0.01μF/16V or	3Y4D103T
	CERAMIC CAP. F Z 0.01μF/16V	1220842T
C 3523	CERAMIC CAP. Y M 0.01μF/16V or	3Y4D103T
	CERAMIC CAP. F Z 0.01μF/16V	1220842T
C 3524	CERAMIC CAP. SL J 47pF/50V	3S41470T
C 3529	CERAMIC CAP. Y M 0.01μF/16V or	3Y4D103T
	CERAMIC CAP. F Z 0.01μF/16V	1220842T
C 3530	CERAMIC CAP. SL J 22pF/50V	3S41220T
C 3531	SEMICONDUCTOR CAP. SR M 0.1μF/12V	12X1104
C 4001	SEMICONDUCTOR CAP. SR K 0.0018μF/25V	12Y2182S
C 4002	SEMICONDUCTOR CAP. SR K 0.0015μF/25V	12Y2152S
C 4004	ELECTROLYTIC CAP. 10μF/16V M	126C106S
C 4005	SEMICONDUCTOR CAP. SR K 0.01μF/25V	12Y2103S
C 4006	SEMICONDUCTOR CAP. SR K 0.1μF/25V	12Y2104S
C 4008	ELECTROLYTIC CAP. 22μF/16V M	126C226S
C 4009	CERAMIC CAP. X K 0.0015μF/16V	3X4C152T
C 4010	SEMICONDUCTOR CAP. SR K 0.1μF/25V	12Y2104S
C 4011	ELECTROLYTIC CAP. 10μF/16V M	126C106S
C 4012	SEMICONDUCTOR CAP. SR K 0.0068μF/25V	12Y2682S
C 4013	SEMICONDUCTOR CAP. SR K 0.022μF/25V	12Y2223S
C 4014	ELECTROLYTIC CAP. 4.7μF/25V M	126D475S
C 4015	ELECTROLYTIC CAP. 22μF/16V M	126C226S
C 4016	CERAMIC CAP. B J 220pF/50V	3B41221T
C 4017	MYLAR CAP. 0.047μF/100V J	6255473S
C 4018	ELECTROLYTIC CAP. 22μF/16V M	126C226S
C 4019	SEMICONDUCTOR CAP. SR K 0.01μF/25V	12Y2103S
C 4020	SEMICONDUCTOR CAP. SR K 0.01μF/25V	12Y2103S
C 4023	ELECTROLYTIC CAP. 47μF/16V M	126C476S
C 4024	CERAMIC CAP. X K 0.0012μF/16V	3X4C122T
C 4026	ELECTROLYTIC CAP. 47μF/16V M	126C476S
	CONNECTORS	
CN3501	FLOATING SOCKET CONNECTOR 10P	JCTKG10TGH0F
	TKC-M10X-A1	
CN3502	ANGLE SOCKET CONNECTOR 17P	1700762
	IL-SDD-17S-S2L2-F	
CN3503	FLOATING SOCKET CONNECTOR 14P	JCTKG14TGH0F
	TKC-M14X-A1	
CN3504	ANGLE SOCKET CONNECTOR 6P	1770601
	IL-SDA- 6S-S2L2	
CN4003	FLOATING SOCKET CONNECTOR 10P	JCTKG10TGH0F
	TKC M10X-A1	
	ICS	
IC3501	IC LA7370	GLA7370*****
IC4001	IC AUDIO LA7282	QSZLA0SSY003
	COILS	
L 3501	INDUCTOR 82μH-K-26T or	LLAXKATTU820
	INDUCTOR 82μH-K-26T	LLAXKDTKA820
L 3502	INDUCTOR 180μH-K-26T or	LLAXKATTU181
	INDUCTOR 180μH-K-26T	LLAXKDTKA181
L 3503	INDUCTOR 56μH-K-26T or	LLAXKATTU560
	INDUCTOR 56μH-K-26T	LLAXKDTKA560
L 3504	INDUCTOR 56μH-K-26T or	LLAXKATTU560
	INDUCTOR 56μH-K-26T	LLAXKDTKA560
L 3505	INDUCTOR 33μH-K-26T or	LLAXKATTU330
	INDUCTOR 33μH-K-26T	LLAXKDTKA330
L 3506	INDUCTOR 22μH-K-26T or	LLAXKATTU220
	INDUCTOR 22μH-K-26T	LLAXKDTKA220
L 3507	INDUCTOR 56μH-K-26T or	LLAXKATTU560
	INDUCTOR 56μH-K-26T	LLAXKDTKA560
L 3508	INDUCTOR 22μH-K-26T or	LLAXKATTU220
	INDUCTOR 22μH-K-26T	LLAXKDTKA220
L 3509	INDUCTOR 100μH-K-26T or	LLAXKATTU101
	INDUCTOR 100μH-K-26T	LLAXKDTKA101
L 3510	INDUCTOR 100μH-K-26T or	LLAXKATTU101
	INDUCTOR 100μH-K-26T	LLAXKDTKA101
L 3511	INDUCTOR 100μH-K-26T or	LLAXKATTU101
	INDUCTOR 100μH-K-26T	LLAXKDTKA101
L 4001	INDUCTOR 18mH or	117M500
	INDUCTOR 18mH	117D498
L 4002	INDUCTOR 100μH-K-26T or	LLAXKATTU101
	INDUCTOR 100μH-K-26T	LLAXKDTKA101
	TRANSISTORS	
Q 3501	TRANSISTOR 2SC2058(P) or	C2058PZ
	TRANSISTOR 2SC2058(Q) or	C2058QZ
	TRANSISTOR 2SC2839(E) or	C2839EZ
	TRANSISTOR 2SC2839(F)	C2839FZ
Q 3503	TRANSISTOR 2SC1740(Q) or	C1740QZ
	TRANSISTOR 2SC1740(R) or	C1740RZ
	TRANSISTOR 2SC536SP(E) or	C536SEZ
	TRANSISTOR 2SC536SP(F)	C536SFZ
Q 3504	TRANSISTOR 2SC2058(P) or	C2058PZ
	TRANSISTOR 2SC2058(Q) or	C2058QZ
	TRANSISTOR 2SC2839(E) or	C2839EZ
	TRANSISTOR 2SC2839(F)	C2839FZ
Q 3505	TRANSISTOR 2SC2058(P) or	C2058PZ
	TRANSISTOR 2SC2058(Q) or	C2058QZ
	TRANSISTOR 2SC2839(E) or	C2839EZ
	TRANSISTOR 2SC2839(F)	C2839FZ
Q 3506	RES. BUILT-IN TRANSISTOR DTA124XS	A124XSZ
Q 4001	TRANSISTOR 2SC1740(Q) or	C1740QZ
	TRANSISTOR 2SC1740(R) or	C1740RZ
	TRANSISTOR 2SC536SP(E) or	C536SEZ
	TRANSISTOR 2SC536SP(F)	C536SFZ
Q 4002	TRANSISTOR 2SA933(Q) or	A933QZ
	TRANSISTOR 2SA933(R) or	A933RZ
	TRANSISTOR 2SA608SP(E) or	A608SEZ
	TRANSISTOR 2SA608SP(F)	A608SFZ
Q 4003	RES. BUILT-IN TRANSISTOR DTC124ES or	C124ESZ
	RES. BUILT-IN TRANSISTOR 2SC3400	C3400Z
	RESISTORS	
R 3205	CARBON RES. 1/5W J 820 Ω or	1324821T
	CARBON RES. 1/6W J 820 Ω or	132A821T
	CARBON RES. 1/4W J 820 Ω	RCX4JATZ0821
R 3501	CARBON RES. 1/5W J 820 Ω or	1324821T
	CARBON RES. 1/6W J 820 Ω or	132A821T
	CARBON RES. 1/4W J 820 Ω	RCX4JATZ0821
R 3502	CARBON RES. 1/5W J 1.5K Ω or	1324152T
	CARBON RES. 1/6W J 1.5K Ω or	132A152T
	CARBON RES. 1/4W J 1.5K Ω	RCX4JATZ0152
R 3503	CARBON RES. 1/5W J 3.9K Ω or	1324392T
	CARBON RES. 1/6W J 3.9K Ω or	132A392T
	CARBON RES. 1/4W J 3.9K Ω	RCX4JATZ0392
R 3504	CARBON RES. 1/5W J 8.2K Ω or	1324822T
	CARBON RES. 1/6W J 8.2K Ω or	132A822T
	CARBON RES. 1/4W J 8.2K Ω	RCX4JATZ0822
R 3505	CARBON RES. 1/5W J 820 Ω or	1324821T
	CARBON RES. 1/6W J 820 Ω or	132A821T
	CARBON RES. 1/4W J 820 Ω	RCX4JATZ0821
R 3506	CARBON RES. 1/5W J 6.8K Ω or	1324682T
	CARBON RES. 1/6W J 6.8K Ω or	132A682T
	CARBON RES. 1/4W J 6.8K Ω	RCX4JATZ0682

K2870EL2

Ref. No.	Description	Part No.
R 104	CHIP RES. 1/10W J 100K Ω	134F104C
R 106	CHIP RES. 1/10W J 0 Ω	134F000C
R 107	CHIP RES. 1/10W J 8.2K Ω	134F822C
R 108	CHIP RES. 1/10W J 4.7K Ω	134F472C
R 109	CHIP RES. 1/10W J 390 Ω	134F391C
R 110	CHIP RES. 1/10W J 150 Ω	134F151C
R 111	CHIP RES. 1/10W J 470 Ω	134F471C
R 112	CHIP RES. 1/10W J 270 Ω	134F271C
R 113	CHIP RES. 1/10W J 1.5K Ω	134F152C
R 114	CHIP RES. 1/10W J 5.6K Ω	134F562C
R 115	CHIP RES. 1/10W J 2.7K Ω	134F272C
R 116	CHIP RES. 1/10W J 1.8K Ω	134F182C
R 117	CHIP RES. 1/10W J 1K Ω	134F102C
R 118	CHIP RES. 1/10W J 22K Ω	134F223C
R 119	CHIP RES. 1/10W J 1.2K Ω	134F122C
R 120	CHIP RES. 1/10W J 1K Ω	134F102C
R 121	CHIP RES. 1/10W J 1K Ω	134F102C
R 123	CHIP RES. 1/10W J 3.3K Ω	134F332C
R 124	CHIP RES. 1/10W J 1.8K Ω	134F182C
R 125	CHIP RES. 1/10W J 0 Ω	134F000C
R 126	CHIP RES. 1/10W J 1K Ω	134F102C
R 127	CHIP RES. 1/10W J 2.2K Ω	134F222C
R 128	CHIP RES. 1/10W J 1K Ω	134F102C
R 129	CHIP RES. 1/10W J 680 Ω	134F681C
R 130	CHIP RES. 1/10W J 47K Ω	134F473C
R 141	CHIP RES. 1/10W J 470 Ω	134F471C
R 142	CHIP RES. 1/10W J 2.2K Ω	134F222C
R 143	CHIP RES. 1/10W J 220 Ω	134F221C
R 144	CHIP RES. 1/10W J 0 Ω	134F000C
R 151	CHIP RES. 1/10W J 270 Ω	134F271C
R 152	CHIP RES. 1/10W J 3.9K Ω	134F392C
R 153	CHIP RES. 1/10W J 1.8K Ω	134F182C
R 154	CHIP RES. 1/10W J 4.7K Ω	134F472C
R 156	CHIP RES. 1/10W J 0 Ω	134F000C
R 181	CHIP RES. 1/10W J 15K Ω	134F153C
R 182	CHIP RES. 1/10W J 1K Ω	134F102C
R 183	CHIP RES. 1/10W J 10K Ω	134F103C
R 184	CHIP RES. 1/10W J 1K Ω	134F102C
R 185	CHIP RES. 1/10W J 5.6K Ω	134F562C
R 186	CHIP RES. 1/10W J 1K Ω	134F102C
R 187	CHIP RES. 1/10W J 560 Ω	134F561C
R 189	CHIP RES. 1/10W J 1K Ω	134F102C
R 190	CHIP RES. 1/10W J 3.3K Ω	134F332C
R 191	CARBON RES. 1/5W J 560K Ω or	1324564
	CARBON RES. 1/6W J 560K Ω or	132A564
	CARBON RES. 1/4W J 560K Ω	RCX4JZPZ0564
J 113	CARBON RES. 1/5W J 22K Ω or	1324223T
	CARBON RES. 1/6W J 22K Ω or	132A223T
	CARBON RES. 1/4W J 22K Ω	RCX4JATZ0223
	VOLUMES	
VR 51	P.O.T. 5KΩ B	138J780
VR 52	P.O.T. 5KΩ B	138J780
VR 53	P.O.T. 2KΩ B or	138J778
	P.O.T. 2KΩ B	138N778
VR 54	SEMI FIXED RES. 500 Ω B or	138J776
	SEMI FIXED RES. 500 Ω B or	138N776
	P.O.T. 500 Ω B	1380712
VR 55	P.O.T. 5KΩ B	138J780

Ref. No.	Description	Part No.
	MISCELLANEOUS	
CF 181	CERAMIC FILTER 4.5MHz or	1810359
	CERAMIC FILTER 4.5MHz	1813358
DL 101	COMB FILTER 4.433619MHz	1813522
DL 151	COMB FILTER ADL-FN1344F	1813025
T 51	L.P.F. 3MHz ELB-4M031N	1810805
T 101	LC FILTER ELB4W009N	1813477
TP 51	TEST PIN RT-08T-1.3BT	1770482
TP 52	TEST PIN RT-08T-1.3BT	1770482
TP 53	TEST PIN RT-08T-1.3BT	1770482
TP 54	TEST PIN RT-08T-1.3BT	1770482
TP 181	TEST PIN RT-08T-1.3BT	1770482
X 101	X'TAL 4.433619MHz or	1811366
	X'TAL 4.433619MHz	1811388
	PIN HEADER ANGLE 22P 6030B-1-22Z027-T	5700320

Ref. No.	Description	Part No.
SW5507	PUSH SWITCH EVQ-335 05R or	5622212Y
	PUSH SWITCH SK0HV00059	SST0101AL003
SW5508	PUSH SWITCH EVQ-335 05R or	5622212Y
	PUSH SWITCH SK0HV00059	SST0101AL003
SW5509	PUSH SWITCH EVQ-335 05R or	5622212Y
	PUSH SWITCH SK0HV00059	SST0101AL003
SW5510	PUSH SWITCH EVQ-335 05R or	5622212Y
	PUSH SWITCH SK0HV00059	SST0101AL003
	MISCELLANEOUS	
B2- 6	HOLDER L.E.D. K1870UA	
RS5501	REMOTE SENSOR UNIT SFN-R0011 or	0VM402894
	REMOTE CONTROL UNIT HC-278N	1812501
	SEITEC REMOTE SENSOR EXCLUSIVE or	USESJRSKK008
	KODENSHI REMOTE SENSOR EXCLUSIVE	0VDM05518
	WIRE 100/BLA/AWG20#1007	0VDM05519
		WX1K1821-005

MSV C.B.A.

Ref. No.	Description	Part No.
	MSV C.B.A. JP380/2870	0VSA04957
	Consists of the following :	
⚠	P.C.B.(-3) VIDEO	1614927
	CAPACITORS	
C 51	CHIP CERAMIC CAP. SL J 100pF/50V	1270101C
C 52	CHIP CERAMIC CAP. SL J 220pF/50V	1270221C
C 53	CHIP CERAMIC CAP. F Z 0.047µF/50V	12F3473C
C 54	CHIP CERAMIC CAP. SL C 5pF/50V	1270509C
C 55	CHIP CERAMIC CAP. SL J 390pF/50V	1270391C
C 56	CHIP CERAMIC CAP. SL J 33pF/50V	1270330C
C 57	CHIP CERAMIC CAP. SL J 15pF/50V	1270150C
C 58	ELECTROLYTIC CAP. 0.47µF/50V M NP	126X474S
C 59	CHIP CERAMIC CAP. SL J 47pF/50V	1270470C
C 60	CHIP CERAMIC CAP. SL J 180pF/50V	1270181C
C 61	ELECTROLYTIC CAP. 2.2µF/50V M NP	126X225S
C 62	ELECTROLYTIC CAP. 2.2µF/50V M	126F225S
C 63	ELECTROLYTIC CAP. 0.47µF/50V M	126F474S
C 64	CHIP CERAMIC CAP. SL J 15pF/50V	1270150C
C 66	CHIP CERAMIC CAP. SL J 82pF/50V	1270820C
C 67	CHIP CERAMIC CAP. SL J 47pF/50V	1270470C
C 68	CHIP CERAMIC CAP. SL J 22pF/50V	1270220C
C 69	CHIP CERAMIC CAP. SL J 82pF/50V	1270820C
C 70	CHIP CERAMIC CAP. SL J 22pF/50V	1270220C
C 71	ELECTROLYTIC CAP. 1µF/50V M	126F105S
C 72	CHIP CERAMIC CAP. F Z 0.01µF/50V	12F3103C
C 73	CHIP CERAMIC CAP. F Z 0.01µF/50V	12F3103C
C 74	ELECTROLYTIC CAP. 4.7µF/25V M	126D475S
C 75	ELECTROLYTIC CAP. 10µF/16V M	126C106S
C 76	CHIP CERAMIC CAP. F Z 0.047µF/50V	12F3473C
C 77	ELECTROLYTIC CAP. 10µF/16V M	126C106S
C 78	ELECTROLYTIC CAP. 47µF/6.3V M	126A476S
C 79	CHIP CERAMIC CAP. B K 0.068µF/16V	12B6683C
C 80	CHIP CERAMIC CAP. F Z 0.01µF/50V	12F3103C
C 81	CHIP CERAMIC CAP. F Z 0.01µF/50V	12F3103C
C 84	ELECTROLYTIC CAP. 47µF/6.3V M	126A476S
C 86	ELECTROLYTIC CAP. 2.2µF/50V M	126F225S
C 87	ELECTROLYTIC CAP. 2.2µF/50V M	126F225S
C 88	CHIP CERAMIC CAP. F Z 0.01µF/50V	12F3103C
C 89	ELECTROLYTIC CAP. 0.47µF/50V M	126F474S
C 90	ELECTROLYTIC CAP. 10µF/16V M	126C106S

Ref. No.	Description	Part No.
C 92	ELECTROLYTIC CAP. 10µF/16V M	126C106S
C 94	CHIP CERAMIC CAP. B K 0.068µF/16V	12B6683C
C101	CHIP CERAMIC CAP. F Z 0.01µF/50V	12F3103C
C 102	ELECTROLYTIC CAP. 1µF/50V M	126F105S
C 103	CHIP CERAMIC CAP. B K 0.01µF/50V	12B3103C
C 104	CHIP CERAMIC CAP. SL J 39pF/50V	1270390C
C 105	CHIP CERAMIC CAP. SL J 100pF/50V	1270101C
C 106	ELECTROLYTIC CAP. 47µF/6.3V M	126A476S
C 108	CHIP CERAMIC CAP. SL J 100pF/50V	1270101C
C 109	CHIP CERAMIC CAP. F Z 0.01µF/50V	12F3103C
C 110	CHIP CERAMIC CAP. F Z 0.01µF/50V	12F3103C
C 111	CHIP CERAMIC CAP. F Z 0.01µF/50V	12F3103C
C 112	CHIP CERAMIC CAP. B K 0.047µF/25V	12B2473C
C 113	CHIP CERAMIC CAP. F Z 0.01µF/50V	12F3103C
C 114	ELECTROLYTIC CAP. 1µF/50V M H7	526W105S
C 115	CHIP CERAMIC CAP. B K 0.01µF/50V	12B3103C
C 116	ELECTROLYTIC CAP. 1µF/50V M	126F105S
C 117	ELECTROLYTIC CAP. 2.2µF/50V M	126F225S
C 118	CHIP CERAMIC CAP. B K 0.022µF/50V	12B3223C
C 119	CHIP CERAMIC CAP. F Z 0.01µF/50V	12F3103C
C 120	CHIP CERAMIC CAP. F Z 0.01µF/50V	12F3103C
C 121	CHIP CERAMIC CAP. B K 0.047µF/25V	12B2473C
C 123	CHIP CERAMIC CAP. SL J 150pF/50V	1270151C
C 124	CHIP CERAMIC CAP. SL J 200pF/50V	1270201C
C 125	CHIP CERAMIC CAP. SL J 220pF/50V	1270221C
C 126	CHIP CERAMIC CAP. F Z 0.01µF/50V	12F3103C
C 127	CHIP CERAMIC CAP. F Z 0.01µF/50V	12F3103C
C 132	CHIP CERAMIC CAP. F Z 0.047µF/50V	12F3473C
C 133	CHIP CERAMIC CAP. F Z 0.01µF/50V	12F3103C
C 141	CHIP CERAMIC CAP. F Z 0.01µF/50V	12F3103C
C 151	CHIP CERAMIC CAP. F Z 0.01µF/50V	12F3103C
C 152	CHIP CERAMIC CAP. F Z 0.01µF/50V	12F3103C
C 153	CHIP CERAMIC CAP. B K 0.022µF/50V	12B3223C
C 181	ELECTROLYTIC CAP. 10µF/16V M H7	526T106S
C 182	ELECTROLYTIC CAP. 10µF/16V M	126C106S
C 183	P.L CAP. 0.082µF/100V J	2231823
C 184	ELECTROLYTIC CAP. 0.1µF/50V M H7	526W104S
C 185	CHIP CERAMIC CAP. F Z 0.01µF/50V	12F3103C
C 188	CHIP CERAMIC CAP. F Z 0.01µF/50V	12F3103C
C 189	CHIP CERAMIC CAP. F Z 0.01µF/50V	12F3103C
C 191	CHIP CERAMIC CAP. F Z 0.01µF/50V	12F3103C
C 192	CERAMIC CAP. B J 100pF/50V	3B11101
	DIODES	
D 51	DIODE 1SS254 or	A1SS254T77**
	DIODE GMB01B	GMB01BT
D 102	DIODE 1SS254 or	A1SS254T77**
	DIODE GMB01B	GMB01BT
D 151	DIODE 1SS254 or	A1SS254T77**
	DIODE GMB01B	GMB01BT
D 181	DIODE 1SS254 or	A1SS254*****
	DIODE GMB01B	GMB01B
	ICS	
IC 51	IC LA7323	GLA7323*****
IC 52	IC LC89992	14LQ489
IC 53	VOLTAGE REGULATOR IC AN78M05F or	AN78M05F
	VOLTAGE REGULATOR IC UPC78M05HF or	78M05HF
	VOLTAGE REGULATOR IC NJM78M05FA	14L0238
IC 101	IC CHROMA LA7333	GLA7333*****
IC 181	IC AN6368	GAN6368*****

Ref. No.	Description	Part No.
	COILS	
L 51	INDUCTOR 68µH-K-26T or	LLAXKATTU680
	INDUCTOR 68µH-K-26T	LLAXKDTKA680
L 52	INDUCTOR 68µH-K-26T or	LLAXKATTU680
	INDUCTOR 68µH-K-26T	LLAXKDTKA680
L 53	INDUCTOR 100µH-K-26T or	LLAXKATTU101
	INDUCTOR 100µH-K-26T	LLAXKDTKA101
L 57	INDUCTOR 47µH-K-26T or	LLAXKATTU470
	INDUCTOR 47µH-K-26T	LLAXKDTKA470
L 101	INDUCTOR 18µH-K-26T or	LLAXKATTU180
	INDUCTOR 18µH-K-26T	LLAXKDTKA180
L 102	INDUCTOR 3.9µH-K-26T or	LLAXKATTU3R9
	INDUCTOR 3.9µH-K-26T	LLAXKDTKA3R9
L 103	MICRO INDUCTOR 680µH-K	2162681
L 105	INDUCTOR 330µH-K-26T	LLAXKDTKA331
L 106	MICRO INDUCTOR 680µH-K-5FT or	2162681S
	INDUCTOR 680µH-K-5FT	LLARKBSFS681
L 107	INDUCTOR 15µH-K-26T or	LLAXKATTU150
	INDUCTOR 15µH-K-26T	LLAXKDTKA150
L 181	COIL 5mH or	113M747
	COIL 5mH	113D747
	TRANSISTORS	
Q 51	TRANSISTOR 2SA933(Q) or	A933QZ
	TRANSISTOR 2SA933(R) or	A933RZ
	TRANSISTOR 2SA608SP(E) or	A608SEZ
	TRANSISTOR 2SA608SP(F)	A608SFZ
Q 52	TRANSISTOR 2SC1740(Q) or	C1740QZ
	TRANSISTOR 2SC1740(R) or	C1740RZ
	TRANSISTOR 2SC536SP(E) or	C536SEZ
	TRANSISTOR 2SC536SP(F)	C536SFZ
Q 53	TRANSISTOR 2SC1740(Q) or	C1740QZ
	TRANSISTOR 2SC1740(R) or	C1740RZ
	TRANSISTOR 2SC536SP(E) or	C536SEZ
	TRANSISTOR 2SC536SP(F)	C536SFZ
Q 54	TRANSISTOR 2SA933(Q) or	A933QZ
	TRANSISTOR 2SA933(R) or	A933RZ
	TRANSISTOR 2SA608SP(E) or	A608SEZ
	TRANSISTOR 2SA608SP(F)	A608SFZ
Q 55	TRANSISTOR 2SC1740(Q) or	C1740QZ
	TRANSISTOR 2SC1740(R) or	C1740RZ
	TRANSISTOR 2SC536SP(E) or	C536SEZ
	TRANSISTOR 2SC536SP(F)	C536SFZ
Q 56	TRANSISTOR 2SC1740(Q) or	C1740QZ
	TRANSISTOR 2SC1740(R) or	C1740RZ
	TRANSISTOR 2SC536SP(E) or	C536SEZ
	TRANSISTOR 2SC536SP(F)	C536SFZ
Q 101	TRANSISTOR 2SC1740(Q) or	C1740QZ
	TRANSISTOR 2SC1740(R) or	C1740RZ
	TRANSISTOR 2SC536SP(E) or	C536SEZ
	TRANSISTOR 2SC536SP(F)	C536SFZ
Q 102	TRANSISTOR 2SC2058(P) or	C2058PZ
	TRANSISTOR 2SC2058(Q) or	C2058QZ
	TRANSISTOR 2SC2839(E) or	C2839EZ
	TRANSISTOR 2SC2839(F)	C2839FZ
Q 103	TRANSISTOR 2SC1740(Q) or	C1740QZ
	TRANSISTOR 2SC1740(R) or	C1740RZ
	TRANSISTOR 2SC536SP(E) or	C536SEZ
	TRANSISTOR 2SC536SP(F)	C536SFZ

Ref. No.	Description	Part No.
Q 104	TRANSISTOR 2SC1740(Q) or	C1740QZ
	TRANSISTOR 2SC1740(R) or	C1740RZ
	TRANSISTOR 2SC536SP(E) or	C536SEZ
	TRANSISTOR 2SC536SP(F)	C536SFZ
Q 107	TRANSISTOR 2SC2058(P) or	C2058PZ
	TRANSISTOR 2SC2058(Q) or	C2058QZ
	TRANSISTOR 2SC2839(E) or	C2839EZ
	TRANSISTOR 2SC2839(F)	C2839FZ
Q 151	TRANSISTOR 2SC2058(P) or	C2058PZ
	TRANSISTOR 2SC2058(Q) or	C2058QZ
	TRANSISTOR 2SC2839(E) or	C2839EZ
	TRANSISTOR 2SC2839(F)	C2839FZ
QR 53	RES. BUILT-IN TRANSISTOR DTC124ES or	C124ESZ
	RES. BUILT-IN TRANSISTOR 2SC3400	C3400Z
QR 54	RES. BUILT-IN TRANSISTOR DTC124ES or	C124ESZ
	RES. BUILT-IN TRANSISTOR 2SC3400	C3400Z
QR 57	RES. BUILT-IN TRANSISTOR DTC124ES or	C124ESZ
	RES. BUILT-IN TRANSISTOR 2SC3400	C3400Z
QR 151	RES. BUILT-IN TRANSISTOR DTC124ES or	C124ESZ
	RES. BUILT-IN TRANSISTOR 2SC3400	C3400Z
QR 181	RES. BUILT-IN TRANSISTOR DTC144WS	C144WSZ
QR 182	RES. BUILT-IN TRANSISTOR DTC124ES or	C124ESZ
	RES. BUILT-IN TRANSISTOR 2SC3400	C3400Z
QR 183	RES. BUILT-IN TRANSISTOR DTC124ES or	C124ESZ
	RES. BUILT-IN TRANSISTOR 2SC3400	C3400Z
	RESISTORS	
R 51	CHIP RES. 1/10W J 1K Ω	134F102C
R 52	CHIP RES. 1/10W J 1.2K Ω	134F122C
R 53	CHIP RES. 1/10W J 2.7K Ω	134F272C
R 54	CHIP RES. 1/10W J 1.1K Ω	134F112C
R 55	CHIP RES. 1/10W J 4.7K Ω	134F472C
R 56	CHIP RES. 1/10W J 8.2K Ω	134F822C
R 57	CHIP RES. 1/10W J 2.7K Ω	134F272C
R 58	CHIP RES. 1/10W J 560 Ω	134F561C
R 59	CHIP RES. 1/10W J 3.3K Ω	134F332C
R 60	CHIP RES. 1/10W J 220 Ω	134F221C
R 61	CHIP RES. 1/10W J 1M Ω	134F105C
R 62	CHIP RES. 1/10W J 1K Ω	134F102C
R 63	CHIP RES. 1/10W J 1M Ω	134F105C
R 64	CHIP RES. 1/10W J 1M Ω	134F105C
R 65	CHIP RES. 1/10W J 2.2K Ω	134F222C
R 66	CHIP RES. 1/10W J 5.6K Ω	134F562C
R 67	CHIP RES. 1/10W J 1K Ω	134F102C
R 68	CHIP RES. 1/10W J 4.7K Ω	134F472C
R 69	CHIP RES. 1/10W J 2.2K Ω	134F222C
R 70	CHIP RES. 1/10W J 2.2K Ω	134F222C
R 71	CHIP RES. 1/10W J 560 Ω	134F561C
R 72	CHIP RES. 1/10W J 1K Ω	134F102C
R 73	CHIP RES. 1/10W J 1.8K Ω	134F182C
R 74	CHIP RES. 1/10W J 12K Ω	134F123C
R 77	CHIP RES. 1/10W J 33K Ω	134F333C
R 78	CHIP RES. 1/10W J 1.2K Ω	134F122C
R 79	CHIP RES. 1/10W J 1K Ω	134F102C
R 80	CHIP RES. 1/10W J 1K Ω	134F102C
R 81	CHIP RES. 1/10W J 68 Ω	134F680C
R 82	CHIP RES. 1/10W J 470K Ω	134F474C
R 83	CHIP RES. 1/10W J 100K Ω	134F104C
R 84	CHIP RES. 1/10W J 39K Ω	134F393C
R 85	CHIP RES. 1/10W J 1K Ω	134F102C
R 101	CHIP RES. 1/10W J 3.3K Ω	134F332C

Ref. No.	Description	Part No.
R 3507	CARBON RES. 1/5W J 1K Ω or	1324102T
	CARBON RES. 1/6W J 1K Ω or	132A102T
	CARBON RES. 1/4W J 1K Ω	RCX4JATZ0102
R 3508	CARBON RES. 1/5W J 1.5K Ω or	1324152T
	CARBON RES. 1/6W J 1.5K Ω or	132A152T
	CARBON RES. 1/4W J 1.5K Ω	RCX4JATZ0152
R 3509	CARBON RES. 1/5W J 3.9K Ω or	1324392T
	CARBON RES. 1/6W J 3.9K Ω or	132A392T
	CARBON RES. 1/4W J 3.9K Ω	RCX4JATZ0392
R 3510	CARBON RES. 1/5W J 1.8K Ω or	1324182T
	CARBON RES. 1/6W J 1.8K Ω or	132A182T
	CARBON RES. 1/4W J 1.8K Ω	RCX4JATZ0182
R 3511	CARBON RES. 1/5W J 390 Ω or	1324391T
	CARBON RES. 1/6W J 390 Ω or	132A391T
	CARBON RES. 1/4W J 390 Ω	RCX4JATZ0391
R 3512	CARBON RES. 1/5W J 1K Ω or	1324102T
	CARBON RES. 1/6W J 1K Ω or	132A102T
	CARBON RES. 1/4W J 1K Ω	RCX4JATZ0102
R 3513	CARBON RES. 1/5W J 1.5K Ω or	1324152T
	CARBON RES. 1/6W J 1.5K Ω or	132A152T
	CARBON RES. 1/4W J 1.5K Ω	RCX4JATZ0152
R 3514	CARBON RES. 1/5W J 1.2K Ω or	1324122T
	CARBON RES. 1/6W J 1.2K Ω or	132A122T
	CARBON RES. 1/4W J 1.2K Ω	RCX4JATZ0122
R 3515	CARBON RES. 1/5W J 390 Ω or	1324391T
	CARBON RES. 1/6W J 390 Ω or	132A391T
	CARBON RES. 1/4W J 390 Ω	RCX4JATZ0391
R 3516	CARBON RES. 1/5W J 390 Ω or	1324391T
	CARBON RES. 1/6W J 390 Ω or	132A391T
	CARBON RES. 1/4W J 390 Ω	RCX4JATZ0391
R 3517	CARBON RES. 1/5W J 680 Ω or	1324681T
	CARBON RES. 1/6W J 680 Ω or	132A681T
	CARBON RES. 1/4W J 680 Ω	RCX4JATZ0681
R 3518	CARBON RES. 1/5W J 22K Ω or	1324223T
	CARBON RES. 1/6W J 22K Ω or	132A223T
	CARBON RES. 1/4W J 22K Ω	RCX4JATZ0223
R 3519	CARBON RES. 1/5W J 8.2K Ω or	1324822T
	CARBON RES. 1/6W J 8.2K Ω or	132A822T
	CARBON RES. 1/4W J 8.2K Ω	RCX4JATZ0822
R 3520	CARBON RES. 1/5W J 2.7K Ω or	1324272T
	CARBON RES. 1/6W J 2.7K Ω or	132A272T
	CARBON RES. 1/4W J 2.7K Ω	RCX4JATZ0272
R 3522	CARBON RES. 1/5W J 33K Ω or	1324333T
	CARBON RES. 1/6W J 33K Ω or	132A333T
	CARBON RES. 1/4W J 33K Ω	RCX4JATZ0333
R 3523	CARBON RES. 1/5W J 5.6K Ω or	1324562T
	CARBON RES. 1/6W J 5.6K Ω or	132A562T
	CARBON RES. 1/4W J 5.6K Ω	RCX4JATZ0562
R 3524	CARBON RES. 1/5W J 1K Ω or	1324102T
	CARBON RES. 1/6W J 1K Ω or	132A102T
	CARBON RES. 1/4W J 1K Ω	RCX4JATZ0102
R 3525	CARBON RES. 1/5W J 1.2K Ω or	1324122T
	CARBON RES. 1/6W J 1.2K Ω or	132A122T
	CARBON RES. 1/4W J 1.2K Ω	RCX4JATZ0122
R 3526	CARBON RES. 1/5W J 2.7K Ω or	1324272T
	CARBON RES. 1/6W J 2.7K Ω or	132A272T
	CARBON RES. 1/4W J 2.7K Ω	RCX4JATZ0272
R 4001	CARBON RES. 1/5W J 100 Ω or	1324101T
	CARBON RES. 1/6W J 100 Ω or	132A101T
	CARBON RES. 1/4W J 100 Ω	RCX4JATZ0101

Ref. No.	Description	Part No.
R 4002	CARBON RES. 1/5W J 33K Ω or	1324333T
	CARBON RES. 1/6W J 33K Ω or	132A333T
	CARBON RES. 1/4W J 33K Ω	RCX4JATZ0333
R 4004	CARBON RES. 1/5W J 82 Ω or	1324820T
	CARBON RES. 1/6W J 82 Ω or	132A820T
	CARBON RES. 1/4W J 82 Ω	RCX4JATZ0820
R 4005	CARBON RES. 1/5W J 390K Ω or	1324394T
	CARBON RES. 1/6W J 390K Ω or	132A394T
	CARBON RES. 1/4W J 390K Ω	RCX4JATZ0394
R 4006	CARBON RES. 1/5W J 6.8K Ω or	1324682T
	CARBON RES. 1/6W J 6.8K Ω or	132A682T
	CARBON RES. 1/4W J 6.8K Ω	RCX4JATZ0682
R 4009	CARBON RES. 1/5W J 2.2M Ω or	1324225T
	CARBON RES. 1/6W J 2.2M Ω or	132A225T
	CARBON RES. 1/4W J 2.2M Ω	RCX4JATZ0225
R 4010	CARBON RES. 1/5W J 27K Ω or	1324273T
	CARBON RES. 1/6W J 27K Ω or	132A273T
	CARBON RES. 1/4W J 27K Ω	RCX4JATZ0273
R 4011	CARBON RES. 1/5W J 5.6K Ω or	1324562T
	CARBON RES. 1/6W J 5.6K Ω or	132A562T
	CARBON RES. 1/4W J 5.6K Ω	RCX4JATZ0562
R 4012	CARBON RES. 1/5W J 3.9K Ω or	1324392T
	CARBON RES. 1/6W J 3.9K Ω or	132A392T
	CARBON RES. 1/4W J 3.9K Ω	RCX4JATZ0392
R 4014	CARBON RES. 1/5W J 1.5K Ω or	1324152T
	CARBON RES. 1/6W J 1.5K Ω or	132A152T
	CARBON RES. 1/4W J 1.5K Ω	RCX4JATZ0152
R 4015	CARBON RES. 1/5W J 1.8K Ω or	1324182T
	CARBON RES. 1/6W J 1.8K Ω or	132A182T
	CARBON RES. 1/4W J 1.8K Ω	RCX4JATZ0182
R 4016	CARBON RES. 1/5W J 1K Ω or	1324102T
	CARBON RES. 1/6W J 1K Ω or	132A102T
	CARBON RES. 1/4W J 1K Ω	RCX4JATZ0102
R 4017	CARBON RES. 1/5W J 1K Ω or	1324102T
	CARBON RES. 1/6W J 1K Ω or	132A102T
	CARBON RES. 1/4W J 1K Ω	RCX4JATZ0102
R 4018	CARBON RES. 1/5W J 27K Ω or	1324273T
	CARBON RES. 1/6W J 27K Ω or	132A273T
	CARBON RES. 1/4W J 27K Ω	RCX4JATZ0273
R 4019	CARBON RES. 1/5W J 47 Ω or	1324470T
	CARBON RES. 1/6W J 47 Ω or	132A470T
	CARBON RES. 1/4W J 47 Ω	RCX4JATZ0470
R 4020	CARBON RES. 1/5W J 6.8K Ω or	1324682T
	CARBON RES. 1/6W J 6.8K Ω or	132A682T
	CARBON RES. 1/4W J 6.8K Ω	RCX4JATZ0682
R 4021	CARBON RES. 1/5W J 4.7 Ω or	1324479T
	CARBON RES. 1/6W J 4.7 Ω or	132A479T
	CARBON RES. 1/4W J 4.7 Ω	RCX4JATZ04R7
R 4022	CARBON RES. 1/5W J 22 Ω or	1324220T
	CARBON RES. 1/6W J 22 Ω or	132A220T
	CARBON RES. 1/4W J 22 Ω	RCX4JATZ0220
R 4025	CARBON RES. 1/5W J 47K Ω or	1324473T
	CARBON RES. 1/6W J 47K Ω or	132A473T
	CARBON RES. 1/4W J 47K Ω	RCX4JATZ0473
R 4026	CARBON RES. 1/5W J 4.7K Ω or	1324472T
	CARBON RES. 1/6W J 4.7K Ω or	132A472T
	CARBON RES. 1/4W J 4.7K Ω	RCX4JATZ0472
R 4027	CARBON RES. 1/5W J 2.2K Ω or	1324222T
	CARBON RES. 1/6W J 2.2K Ω or	132A222T
	CARBON RES. 1/4W J 2.2K Ω	RCX4JATZ0222

Ref. No.	Description	Part No.
R 6032	CARBON RES. 1/5W J 180 Ω or	1324181T
	CARBON RES. 1/6W J 180 Ω or	132A181T
	CARBON RES. 1/4W J 180 Ω	RCX4JATZ0181
	VOLUMES	
VR3501	CARBON P.O.T. 2.2K Ω or	238A338Y
	CARBON P.O.T. 2 KΩ	238N506Y
VR4001	CARBON P.O.T. 100K Ω or	238A348Y
	CARBON P.O.T. 100 KΩ	238N513Y
	MISCELLANEOUS	
B2- 4	SHIELD BOTTOM (TV) K1870UA	0VM301259
B2- 5	SHIELD TOP (2H) K6190BA	0VM300746
TP3501	TEST PIN RT-01T-1.3B	1720688
TP3502	TEST PIN RT-01T-1.3B	1720688
TP3503	TEST PIN RT-01T-1.3B	1720688
TP3504	TEST PIN RT-01T-1.3B	1720688
TP3505	TEST PIN RT-01T-1.3B	1720688
TP4001	TEST PIN RT-01T-1.3B	1720688
TP4002	TEST PIN RT-01T-1.3B	1720688
T 4001	COIL OSC AUDIO or	130686
	COIL OSC AUDIO or	113M686
	COIL OSC AUDIO	113D686

MCV-E C.B.A. (ACE Head Conn.)

Ref. No.	Description	Part No.
	MCV-E C.B.A. Consists of the following :	----------
CN4001	CONNECTOR HOUSING 6P IL-SDD- 6S-S2L2-FA	JCZLB06NBC0F

MCV-F C.B.A. (FE-H Conn.)

Ref. No.	Description	Part No.
	MCV-F C.B.A. Consists of the following :	----------
CN4002	CONNECTOR HOUSING 2P IL-SDD- 2S-S2L2-FA	JCZLB02NBC0F

MCV-G C.B.A. (Control)

Ref. No.	Description	Part No.
	MCV-G C.B.A. Consists of the following :	----------
	CAPACITORS	
C 5501	ELECTROLYTIC CAP. 47µF/6.3V M H7	526R476S
C 5502	CERAMIC CAP. F Z 0.033µF/12V or	1220887T
	CERAMIC CAP. F Z 0.033µF/16V	122Z790T
	CONNECTOR	
CN5501	HINGED PIN CONNECTOR 8P TKC-08P-E1	1700362
	DIODES	
D 5501	LED SLR-34VR5 RED	1401230
D 5502	LED SLR-34VR5 RED	1401230
D 5503	LED SLR-34MG5 GREEN	1401231
	TRANSISTORS	
Q 5501	RES. BUILT-IN TRANSISTOR DTC124ES or	C124ESZ
	RES. BUILT-IN TRANSISTOR 2SC3400	C3400Z
Q 5502	RES. BUILT-IN TRANSISTOR DTC124ES or	C124ESZ
	RES. BUILT-IN TRANSISTOR 2SC3400	C3400Z
Q 5503	RES. BUILT-IN TRANSISTOR DTC124ES or	C124ESZ
	RES. BUILT-IN TRANSISTOR 2SC3400	C3400Z

Ref. No.	Description	Part No.
	RESISTORS	
R 5501	CARBON RES. 1/5W J 100 Ω or	1324101T
	CARBON RES. 1/6W J 100 Ω or	132A101T
	CARBON RES. 1/4W J 100 Ω	RCX4JATZ0101
R 5502	CARBON RES. 1/5W J 10K Ω or	1324103T
	CARBON RES. 1/6W J 10K Ω or	132A103T
	CARBON RES. 1/4W J 10K Ω	RCX4JATZ0103
R 5503	CARBON RES. 1/5W J 4.7K Ω or	1324472T
	CARBON RES. 1/6W J 4.7K Ω or	132A472T
	CARBON RES. 1/4W J 4.7K Ω	RCX4JATZ0472
R 5504	CARBON RES. 1/5W J 4.7K Ω or	1324472T
	CARBON RES. 1/6W J 4.7K Ω or	132A472T
	CARBON RES. 1/4W J 4.7K Ω	RCX4JATZ0472
R 5505	CARBON RES. 1/5W J 1.2K Ω or	1324122T
	CARBON RES. 1/6W J 1.2K Ω or	132A122T
	CARBON RES. 1/4W J 1.2K Ω	RCX4JATZ0122
R 5506	CARBON RES. 1/5W J 3K Ω or	1324302T
	CARBON RES. 1/6W J 3K Ω or	132A302T
	CARBON RES. 1/4W J 3K Ω	RCX4JATZ0302
R 5507	CARBON RES. 1/5W J 6.2K Ω or	1324622T
	CARBON RES. 1/6W J 6.2K Ω or	132A622T
	CARBON RES. 1/4W J 6.2K Ω	RCX4JATZ0622
R 5508	CARBON RES. 1/5W J 6.2K Ω or	1324622T
	CARBON RES. 1/6W J 6.2K Ω or	132A622T
	CARBON RES. 1/4W J 6.2K Ω	RCX4JATZ0622
R 5509	CARBON RES. 1/5W J 15K Ω or	1324153T
	CARBON RES. 1/6W J 15K Ω or	132A153T
	CARBON RES. 1/4W J 15K Ω	RCX4JATZ0153
R 5510	CARBON RES. 1/5W J 15K Ω or	1324153T
	CARBON RES. 1/6W J 15K Ω or	132A153T
	CARBON RES. 1/4W J 15K Ω	RCX4JATZ0153
R 5511	CARBON RES. 1/5W J 470 Ω or	1324471T
	CARBON RES. 1/6W J 470 Ω or	132A471T
	CARBON RES. 1/4W J 470 Ω	RCX4JATZ0471
R 5512	CARBON RES. 1/5W J 470 Ω or	1324471T
	CARBON RES. 1/6W J 470 Ω or	132A471T
	CARBON RES. 1/4W J 470 Ω	RCX4JATZ0471
R 5513	CARBON RES. 1/5W J 1.2K Ω or	1324122T
	CARBON RES. 1/6W J 1.2K Ω or	132A122T
	CARBON RES. 1/4W J 1.2K Ω	RCX4JATZ0122
R 5514	CARBON RES. 1/5W J 3K Ω or	1324302T
	CARBON RES. 1/6W J 3K Ω or	132A302T
	CARBON RES. 1/4W J 3K Ω	RCX4JATZ0302
R 5515	CARBON RES. 1/5W J 150 Ω or	1324151T
	CARBON RES. 1/6W J 150 Ω or	132A151T
	CARBON RES. 1/4W J 150 Ω	RCX4JATZ0151
	SWITCHES	
SW5501	PUSH SWITCH EVQ-335 05R or	5622212Y
	PUSH SWITCH SK0HV00059	SST0101AL003
SW5502	PUSH SWITCH EVQ-335 05R or	5622212Y
	PUSH SWITCH SK0HV00059	SST0101AL003
SW5503	PUSH SWITCH EVQ-335 05R or	5622212Y
	PUSH SWITCH SK0HV00059	SST0101AL003
SW5504	PUSH SWITCH EVQ-335 05R or	5622212Y
	PUSH SWITCH SK0HV00059	SST0101AL003
SW5505	PUSH SWITCH EVQ-335 05R or	5622212Y
	PUSH SWITCH SK0HV00059	SST0101AL003
SW5506	PUSH SWITCH EVQ-335 05R or	5622212Y
	PUSH SWITCH SK0HV00059	SST0101AL003

Ref. No.	Description	Part No.
R632	CARBON RES. 10KΩ 1/6W	132A103T
R635	CARBON RES. 10KΩ 1/6W	132A103T
R637	CARBON RES. 1KΩ 1/6W	132A102T
R638	CARBON RES. 10KΩ 1/6W	132A103T
R639	CARBON RES. 22KΩ 1/4W J	1345223S
R800	CARBON RES. 150KΩ 1/6W	132A154T
	SWITCHES	
SW301	SLIDE SWITCH or	1621654
	SLIDE SWITCH or	SSS0202HZ003
	SLIDE SWITCH or	SSS0202WM001
	SLIDE SWITCH	SSS0202DK001
SW501 ⚠	POWER SWITCH	SPP0A8ZAL001
	VOLUMES	
VR301	SEMIFIXED RES. 1KΩ B (PAL ADJ.) or	638A102
	SEMIFIXED RES. 1KΩ B (PAL ADJ.) or	138J777
	SEMIFIXED RES. 1KΩ B (PAL ADJ.)	1380706
VR302	SEMIFIXED RES. 100KΩ B (V. SIZE) or	638A104
	SEMIFIXED RES. 100KΩ B (V. SIZE) or	138J785
	SEMIFIXED RES. 100KΩ B (V. SIZE)	1380716
VR303	SEMIFIXED RES. 20KΩ B (SUB BRIGHT) or	638A223
	SEMIFIXED RES. 20KΩ B (SUB BRIGHT) or	138J762
	SEMIFIXED RES. 20KΩ B (SUB BRIGHT)	1380709
VR304 (R342)	SEMIFIXED RES. 200Ω B (H. POSITION ADJ.) or	638A221
	SEMIFIXED RES. 200Ω B (H. POSITION ADJ.) or	238J113
	SEMIFIXED RES. 200Ω B (H. POSITION ADJ.)	1380710
VR601	SEMIFIXED RES. 50KΩ B (112V ADJ.) or	638A473
	SEMIFIXED RES. 50KΩ B (112V ADJ.) or	138J784
	SEMIFIXED RES. 50KΩ B (112V ADJ.)	1380704
VR602	SEMIFIXED RES. 5KΩ B (12V ADJ.) or	638A472
	SEMIFIXED RES. 5KΩ B (12V ADJ.) or	138J780
	SEMIFIXED RES. 5KΩ B (12V ADJ.)	1380714
	MISCELLANEOUS	
CN201	CONNECTOR BASE 5pin (for D.Y) or	1780168
	CONNECTOR BASE 5pin (for D.Y) or	1780277
	CONNECTOR BASE 5pin (for D.Y)	1730812
CN501	CONNECTOR BASE 2pin (for D.G. COIL) or	1780165
	CONNECTOR BASE 2pin (for D.G. COIL)	1780276
CN601	CONNECTOR BASE 13pin (MAIN C.B.A. ~ VCR)	1700679
DL301	GLASS DELAY or	1813554
	GLASS DELAY	1812056
F501 ⚠	FUSE T4AH 250V	PAGC20BAG402
FH501	FUSE HOLDER or	1790848
	FUSE HOLDER	1790424
FH502	FUSE HOLDER or	1790848
	FUSE HOLDER	1790424
HS-1	HEAT SINK EH (for IC501)	0EM401068
HS-2	HEAT SINK PO (for IC202)	0EM401065
HS-3	HEAT SINK PQ (for IC601)	0EM401067
HS-4	HEAT SINK PM (for Q202)	0EM401038
J501 ⚠	AC INLET	JTDC0P0HD002
LD 2	WIRE ASS'Y 2pin (MAIN C.B.A. ~ EARPHONE C.B.A.)	WX1B6400-001
LD 3	LEAD WIRE UL1050 AWG22 120mm	WX3001C20012
PS501 ⚠	POSISTOR	5790117
T201	H. DRIVE TRANS	1150325
T202 ⚠	F.B.T.	1813482

Ref. No.	Description	Part No.
T501 ⚠	SWITCHING TRANS	LTT00EPMS007
TP 1	TEST PIN or	1700093
	TEST PIN	1740354
TP 2	TEST PIN or	1700093
	TEST PIN	1740354
TP 3	TEST PIN or	1700093
	TEST PIN	1740354
TP 4	TEST PIN or	1700093
	TEST PIN	1740354
TP 5	TEST PIN or	1700093
	TEST PIN	1740354
TP 6	CONNECTOR PIN	1720688
XT302	X' TAL 4.43MHz	1811387
XT303	CERAMIC RESONATOR	1813552
	HEAT SINK SHEET (for Q202) or	XJ0ZO00DB001
	HEAT SINK SHEET (for Q202)	XJ0Z000CA002
	WIRE TIE or	1790256
	WIRE TIE	1890356

CRT C.B.A.

Ref. No.	Description	Part No.
	CRT C.B.A. Consists of the following :	----------
	CAPACITORS	
C701	CERAMIC CAP. 0.01μF/2KV or	CCD3DZP0E103
	CERAMIC CAP. 0.01μF/2KV	6220602
C702	CERAMIC CAP. 390pF/50V YB or	12B3391S
	CERAMIC CAP. 390pF/50V YB	3B42391T
C703	CERAMIC CAP. 270pF/50V YB or	12B3271S
	CERAMIC CAP. 270pF/50V YB	3B42271T
C704	CERAMIC CAP. 330pF/50V YB or	12B3331S
	CERAMIC CAP. 330pF/50V YB	3B42331T
C705	ELECTROLYTIC CAP. 10μF/50V	126F106S
C706	CERAMIC CAP. 1000pF/50V YB or	12B3102S
	CERAMIC CAP. 1000pF/50V YB	3B42102T
	COIL	
L701	MICRO INDUCTOR 100μH or	2165101T
	MICRO INDUCTOR 100μH	216210T
	TRANSISTORS	
Q701	TR. 2SC2228AEMP(D) or	2SC2228D-AE-MP
	TR. 2SC2228AEMP(E)	2SC2228E-AE-MP
Q702	TR. 2SC2228AEMP(D) or	2SC2228D-AE-MP
	TR. 2SC2228AEMP(E)	2SC2228E-AE-MP
Q703	TR. 2SC2228AEMP(D) or	2SC2228D-AE-MP
	TR. 2SC2228AEMP(E)	2SC2228E-AE-MP
	RESISTORS	
R701	METAL RES. 15KΩ 1W	534A153
R702	METAL RES. 15KΩ 1W	534A153
R703	METAL RES. 15KΩ 1W	534A153
R704	CARBON RES. 1.5KΩ 1/4W J	1345152S
R705	CARBON RES. 1.8KΩ 1/4W J	1345182S
R706	CARBON RES. 1.8KΩ 1/4W J	1345182S
R707	CARBON RES. 1.5KΩ 1/4W J	1345152S
R708	CARBON RES. 1.8KΩ 1/4W J	1345182S
R709	CARBON RES. 1.5KΩ 1/4W J	1345152S
R710	CARBON RES. 1.8KΩ 1/6W	132A182T
R711	CARBON RES. 560Ω 1/6W	132A561T
R712	CARBON RES. 1.8KΩ 1/6W	132A182T
R713	CARBON RES. 330Ω 1/6W	132A331T

Ref. No.	Description	Part No.
R714	CARBON RES. 560Ω 1/6W	132A561T
R715	CARBON RES. 1.8KΩ 1/6W	132A182T
R716	CARBON RES. 560Ω 1/6W	132A561T
	VOLUMES	
VR701	SEMIFIXED RES. 5KΩ B (B. CUT OFF) or	138A957
	SEMIFIXED RES. 5KΩ B (B. CUT OFF) or	138J916
	SEMIFIXED RES. 5KΩ B (B. CUT OFF)	1380851
VR702	SEMIFIXED RES. 5KΩ B (G. CUT OFF) or	138A957
	SEMIFIXED RES. 5KΩ B (G. CUT OFF) or	138J916
	SEMIFIXED RES. 5KΩ B (G. CUT OFF)	1380851
VR703	SEMIFIXED RES. 5KΩ B (R. CUT OFF) or	138A957
	SEMIFIXED RES. 5KΩ B (R. CUT OFF) or	138J916
	SEMIFIXED RES. 5KΩ B (R. CUT OFF)	1380851
VR704	SEMIFIXED RES. 500Ω B (R. DRIVE) or	138A951
	SEMIFIXED RES. 500Ω B (R. DRIVE) or	138J912
	SEMIFIXED RES. 500Ω B (R. DRIVE)	1380849
VR705	SEMIFIXED RES. 500Ω B (B. DRIVE) or	138A951
	SEMIFIXED RES. 500Ω B (B. DRIVE) or	138J912
	SEMIFIXED RES. 500Ω B (B. DRIVE)	1380849
	MISCELLANEOUS	
CN701	CONNECTOR PIN 1pin (CRT GND) or	JTEA000LC001
	CONNECTOR PIN 1pin (CRT GND)	1730688
J702 ⚠	CRT SOCKET or	1780218
	CRT SOCKET	1780080
LD701	WIRE ASS'Y 4pin (MAIN C.B.A. ~ CRT C.B.A.)	WX1B6400-002
LD702	WIRE ASS'Y 5pin (MAIN C.B.A. ~ CRT C.B.A.)	WX1B6400-003

EARPHONE C.B.A.

Ref. No.	Description	Part No.
	EARPHONE C.B.A. Consists of the following :	----------
CN 1	CONNECTOR BASE 2pin (EARPHONE C.B.A. ~ SP)	1770258
EP 1	EARPHONE JACK	163C419
R 10	CARBON RES. 82Ω 1/6W	132A820T

CHASSIS ELECTRICAL PARTS

Ref. No.	Description	Part No.
CRT701 ⚠	CRT 370KRB22-TC09(SPYB) or	1812341
	CRT 37GDA85X-TC01(P) or	1812724
	CRT A34KFC12XX48	TCRT1C●GS001
L504 ⚠	DEGAUSSING COIL or	1120172
	DEGAUSSING COIL	LLBZ000AB013
LD 1	WIRE ASS'Y (EARPHONE C.B.A. ~ SP)	WX1B6200-004
LD703	WIRE ASS'Y (CRT GND WIRE) or	CE8002-04
	WIRE ASS'Y (CRT GND WIRE)	WX1B6200-006
SP 1	SPEAKER or	152N589
	SPEAKER or	1520614
	SPEAKER or	1520568
	SPEAKER or	1520589
	SPEAKER or	DSD0807HC001
	SPEAKER	DSD0808DJ001

Ref. No.	Description	Part No.
R 2043	CARBON RES. 1/5W J 47K Ω or	1324473T
	CARBON RES. 1/6W J 47K Ω or	132A473T
	CARBON RES. 1/4W J 47K Ω	RCX4JATZ0473
R 2044	CARBON RES. 1/5W J 47K Ω or	1324473T
	CARBON RES. 1/6W J 47K Ω or	132A473T
	CARBON RES. 1/4W J 47K Ω	RCX4JATZ0473
R 2045	CARBON RES. 1/5W J 470K Ω or	1324474T
	CARBON RES. 1/6W J 470K Ω or	132A474T
	CARBON RES. 1/4W J 470K Ω	RCX4JATZ0474
R 2046	CARBON RES. 1/5W J 470K Ω or	1324474T
	CARBON RES. 1/6W J 470K Ω or	132A474T
	CARBON RES. 1/4W J 470K Ω	RCX4JATZ0474
R 2048	CARBON RES. 1/5W J 2.7K Ω or	1324272T
	CARBON RES. 1/6W J 2.7K Ω or	132A272T
	CARBON RES. 1/4W J 2.7K Ω	RCX4JATZ0272
R 2049	CARBON RES. 1/5W J 220 Ω or	1324221T
	CARBON RES. 1/6W J 220 Ω or	132A221T
	CARBON RES. 1/4W J 220 Ω	RCX4JATZ0221
R 2050	CARBON RES. 1/5W J 47K Ω or	1324473T
	CARBON RES. 1/6W J 47K Ω or	132A473T
	CARBON RES. 1/4W J 47K Ω	RCX4JATZ0473
R 2051	CARBON RES. 1/5W J 82K Ω or	1324823T
	CARBON RES. 1/6W J 82K Ω or	132A823T
	CARBON RES. 1/4W J 82K Ω	RCX4JATZ0823
R 2060	CARBON RES. 1/5W J 2.2K Ω or	1324222T
	CARBON RES. 1/6W J 2.2K Ω or	132A222T
	CARBON RES. 1/4W J 2.2K Ω	RCX4JATZ0222
R 2061	CARBON RES. 1/5W J 8.2K Ω or	1324822T
	CARBON RES. 1/6W J 8.2K Ω or	132A822T
	CARBON RES. 1/4W J 8.2K Ω	RCX4JATZ0822
R 3201	METAL RES. 1W J 330 Ω or	1330419
	METAL RES. 1W J 330 Ω	1330363
R 3204	CARBON RES. 1/5W J 2.7K Ω or	1324272T
	CARBON RES. 1/6W J 2.7K Ω or	132A272T
	CARBON RES. 1/4W J 2.7K Ω	RCX4JATZ0272
R 3206	CARBON RES. 1/5W J 820 Ω or	1324821T
	CARBON RES. 1/6W J 820 Ω or	132A821T
	CARBON RES. 1/4W J 820 Ω	RCX4JATZ0821
R 3207	CARBON RES. 1/5W J 560 Ω or	1324561T
	CARBON RES. 1/6W J 560 Ω or	132A561T
	CARBON RES. 1/4W J 560 Ω	RCX4JATZ0561
R 3208	CARBON RES. 1/5W J 470 Ω or	1324471T
	CARBON RES. 1/6W J 470 Ω or	132A471T
	CARBON RES. 1/4W J 470 Ω	RCX4JATZ0471
R 3210	CARBON RES. 1/5W J 100 Ω or	1324101T
	CARBON RES. 1/6W J 100 Ω or	132A101T
	CARBON RES. 1/4W J 100 Ω	RCX4JATZ0101
R 6001	CARBON RES. 1/5W J 47K Ω or	1324473T
	CARBON RES. 1/6W J 47K Ω or	132A473T
	CARBON RES. 1/4W J 47K Ω	RCX4JATZ0473
R 6002	CARBON RES. 1/5W J 47K Ω or	1324473T
	CARBON RES. 1/6W J 47K Ω or	132A473T
	CARBON RES. 1/4W J 47K Ω	RCX4JATZ0473
R 6003	CARBON RES. 1/5W J 47K Ω or	1324473T
	CARBON RES. 1/6W J 47K Ω or	132A473T
	CARBON RES. 1/4W J 47K Ω	RCX4JATZ0473
R 6004	CARBON RES. 1/5W J 330K Ω or	1324334T
	CARBON RES. 1/6W J 330K Ω or	132A334T
	CARBON RES. 1/4W J 330K Ω	RCX4JATZ0334

Ref. No.	Description	Part No.
R 6005	CARBON RES. 1/5W J 47K Ω or	1324473T
	CARBON RES. 1/6W J 47K Ω or	132A473T
	CARBON RES. 1/4W J 47K Ω	RCX4JATZ0473
R 6006	CARBON RES. 1/5W J 100 Ω or	1324101T
	CARBON RES. 1/6W J 100 Ω or	132A101T
	CARBON RES. 1/4W J 100 Ω	RCX4JATZ0101
R 6007	CARBON RES. 1/5W J 47K Ω or	1324473T
	CARBON RES. 1/6W J 47K Ω or	132A473T
	CARBON RES. 1/4W J 47K Ω	RCX4JATZ0473
R 6008	CARBON RES. 1/5W J 47K Ω or	1324473T
	CARBON RES. 1/6W J 47K Ω or	132A473T
	CARBON RES. 1/4W J 47K Ω	RCX4JATZ0473
R 6009	CARBON RES. 1/5W J 10K Ω or	1324103T
	CARBON RES. 1/6W J 10K Ω or	132A103T
	CARBON RES. 1/4W J 10K Ω	RCX4JATZ0103
R 6010	CARBON RES. 1/5W J 10K Ω or	1324103T
	CARBON RES. 1/6W J 10K Ω or	132A103T
	CARBON RES. 1/4W J 10K Ω	RCX4JATZ0103
R 6011	CARBON RES. 1/5W J 10K Ω or	1324103T
	CARBON RES. 1/6W J 10K Ω or	132A103T
	CARBON RES. 1/4W J 10K Ω	RCX4JATZ0103
R 6012	CARBON RES. 1/5W J 4.7K Ω or	1324472T
	CARBON RES. 1/6W J 4.7K Ω or	132A472T
	CARBON RES. 1/4W J 4.7K Ω	RCX4JATZ0472
R 6013	CARBON RES. 1/5W J 1K Ω or	1324102T
	CARBON RES. 1/6W J 1K Ω or	132A102T
	CARBON RES. 1/4W J 1K Ω	RCX4JATZ0102
R 6014	CARBON RES. 1/5W J 47K Ω or	1324473T
	CARBON RES. 1/6W J 47K Ω or	132A473T
	CARBON RES. 1/4W J 47K Ω	RCX4JATZ0473
R 6015	CARBON RES. 1/5W J 47K Ω or	1324473T
	CARBON RES. 1/6W J 47K Ω or	132A473T
	CARBON RES. 1/4W J 47K Ω	RCX4JATZ0473
R 6016	CARBON RES. 1/5W J 47K Ω or	1324473T
	CARBON RES. 1/6W J 47K Ω or	132A473T
	CARBON RES. 1/4W J 47K Ω	RCX4JATZ0473
R 6017	CARBON RES. 1/5W J 47K Ω or	1324473T
	CARBON RES. 1/6W J 47K Ω or	132A473T
	CARBON RES. 1/4W J 47K Ω	RCX4JATZ0473
R 6018	CARBON RES. 1/5W J 47K Ω or	1324473T
	CARBON RES. 1/6W J 47K Ω or	132A473T
	CARBON RES. 1/4W J 47K Ω	RCX4JATZ0473
R 6019	CARBON RES. 1/5W J 47K Ω or	1324473T
	CARBON RES. 1/6W J 47K Ω or	132A473T
	CARBON RES. 1/4W J 47K Ω	RCX4JATZ0473
R 6020	CARBON RES. 1/5W J 47K Ω or	1324473T
	CARBON RES. 1/6W J 47K Ω or	132A473T
	CARBON RES. 1/4W J 47K Ω	RCX4JATZ0473
R 6021	CARBON RES. 1/5W J 47K Ω or	1324473T
	CARBON RES. 1/6W J 47K Ω or	132A473T
	CARBON RES. 1/4W J 47K Ω	RCX4JATZ0473
R 6022	CARBON RES. 1/5W J 47K Ω or	1324473T
	CARBON RES. 1/6W J 47K Ω or	132A473T
	CARBON RES. 1/4W J 47K Ω	RCX4JATZ0473
R 6023	CARBON RES. 1/5W J 10K Ω or	1324103T
	CARBON RES. 1/6W J 10K Ω or	132A103T
	CARBON RES. 1/4W J 10K Ω	RCX4JATZ0103
R 6024	CARBON RES. 1/5W J 2.2K Ω or	1324222T
	CARBON RES. 1/6W J 2.2K Ω or	132A222T
	CARBON RES. 1/4W J 2.2K Ω	RCX4JATZ0222

Ref. No.	Description	Part No.
R 6025	CARBON RES. 1/5W J 47K Ω or	1324473T
	CARBON RES. 1/6W J 47K Ω or	132A473T
	CARBON RES. 1/4W J 47K Ω	RCX4JATZ0473
R 6026	CARBON RES. 1/5W J 47K Ω or	1324473T
	CARBON RES. 1/6W J 47K Ω or	132A473T
	CARBON RES. 1/4W J 47K Ω	RCX4JATZ0473
R 6027	CARBON RES. 1/5W J 47K Ω or	1324473T
	CARBON RES. 1/6W J 47K Ω or	132A473T
	CARBON RES. 1/4W J 47K Ω	RCX4JATZ0473
R 7001	CARBON RES. 1/5W J 56K Ω or	1324563T
	CARBON RES. 1/6W J 56K Ω or	132A563T
	CARBON RES. 1/4W J 56K Ω	RCX4JATZ0563
R 7002	CARBON RES. 1/5W J 15K Ω or	1324153T
	CARBON RES. 1/6W J 15K Ω or	132A153T
	CARBON RES. 1/4W J 15K Ω	RCX4JATZ0153
R 7003	CARBON RES. 1/5W J 15K Ω or	1324153T
	CARBON RES. 1/6W J 15K Ω or	132A153T
	CARBON RES. 1/4W J 15K Ω	RCX4JATZ0153
R 7004	CARBON RES. 1/5W J 15K Ω or	1324153T
	CARBON RES. 1/6W J 15K Ω or	132A153T
	CARBON RES. 1/4W J 15K Ω	RCX4JATZ0153
R 7005	CARBON RES. 1/5W J 10K Ω or	1324103T
	CARBON RES. 1/6W J 10K Ω or	132A103T
	CARBON RES. 1/4W J 10K Ω	RCX4JATZ0103
R 7006	CARBON RES. 1/5W J 56K Ω or	1324563T
	CARBON RES. 1/6W J 56K Ω or	132A563T
	CARBON RES. 1/4W J 56K Ω	RCX4JATZ0563
R 7007	CARBON RES. 1/5W J 15K Ω or	1324153T
	CARBON RES. 1/6W J 15K Ω or	132A153T
	CARBON RES. 1/4W J 15K Ω	RCX4JATZ0153
R 7008	CARBON RES. 1/5W J 33K Ω or	1324333T
	CARBON RES. 1/6W J 33K Ω or	132A333T
	CARBON RES. 1/4W J 33K Ω	RCX4JATZ0333
R 7009	CARBON RES. 1/5W J 20K Ω or	1324203T
	CARBON RES. 1/6W J 20K Ω or	132A203T
	CARBON RES. 1/4W J 20K Ω	RCX4JATZ0203
R 7010	CARBON RES. 1/5W J 10K Ω or	1324103T
	CARBON RES. 1/6W J 10K Ω or	132A103T
	CARBON RES. 1/4W J 10K Ω	RCX4JATZ0103
R 7011	CARBON RES. 1/5W J 10K Ω or	1324103T
	CARBON RES. 1/6W J 10K Ω or	132A103T
	CARBON RES. 1/4W J 10K Ω	RCX4JATZ0103
R 7012	CARBON RES. 1/5W J 3.3K Ω or	1324332T
	CARBON RES. 1/6W J 3.3K Ω or	132A332T
	CARBON RES. 1/4W J 3.3K Ω	RCX4JATZ0332
R 7013	CARBON RES. 1/5W J 3.9K Ω or	1324392T
	CARBON RES. 1/6W J 3.9K Ω or	132A392T
	CARBON RES. 1/4W J 3.9K Ω	RCX4JATZ0392
R 7014	CARBON RES. 1/5W J 6.8K Ω or	1324682T
	CARBON RES. 1/6W J 6.8K Ω or	132A682T
	CARBON RES. 1/4W J 6.8K Ω	RCX4JATZ0682
R 7015	CARBON RES. 1/5W J 10K Ω or	1324103T
	CARBON RES. 1/6W J 10K Ω or	132A103T
	CARBON RES. 1/4W J 10K Ω	RCX4JATZ0103
R 7016	CARBON RES. 1/5W J 100K Ω or	1324104T
	CARBON RES. 1/6W J 100K Ω or	132A104T
	CARBON RES. 1/4W J 100K Ω	RCX4JATZ0104
R 7017	CARBON RES. 1/5W J 22K Ω or	1324223T
	CARBON RES. 1/6W J 22K Ω or	132A223T
	CARBON RES. 1/4W J 22K Ω	RCX4JATZ0223

Ref. No.	Description	Part No.
R 7018	CARBON RES. 1/5W J 820 Ω or	1324821T
	CARBON RES. 1/6W J 820 Ω or	132A821T
	CARBON RES. 1/4W J 820 Ω	RCX4JATZ0821
R 7019	CARBON RES. 1/5W J 750 Ω or	1324751T
	CARBON RES. 1/6W J 750 Ω or	132A751T
	CARBON RES. 1/4W J 750 Ω	RCX4JATZ0751
R 7020	CARBON RES. 1/5W J 1K Ω or	1324102T
	CARBON RES. 1/6W J 1K Ω or	132A102T
	CARBON RES. 1/4W J 1K Ω	RCX4JATZ0102
R 7021	CARBON RES. 1/5W J 330K Ω or	1324334T
	CARBON RES. 1/6W J 330K Ω or	132A334T
	CARBON RES. 1/4W J 330K Ω	RCX4JATZ0334
R 7023	CARBON RES. 1/5W J 2.2K Ω or	1324222T
	CARBON RES. 1/6W J 2.2K Ω or	132A222T
	CARBON RES. 1/4W J 2.2K Ω	RCX4JATZ0222
R 7025	CARBON RES. 1/5W J 10K Ω or	1324103T
	CARBON RES. 1/6W J 10K Ω or	132A103T
	CARBON RES. 1/4W J 10K Ω	RCX4JATZ0103
R 7026	CARBON RES. 1/5W J 2.2K Ω or	1324222T
	CARBON RES. 1/6W J 2.2K Ω or	132A222T
	CARBON RES. 1/4W J 2.2K Ω	RCX4JATZ0222
R 7027	CARBON RES. 1/5W J 56 Ω or	1324560T
	CARBON RES. 1/6W J 56 Ω or	132A560T
	CARBON RES. 1/4W J 56 Ω	RCX4JATZ0560
R 7502	CARBON RES. 1/5W J 75 Ω or	1324750T
	CARBON RES. 1/6W J 75 Ω or	132A750T
	CARBON RES. 1/4W J 75 Ω	RCX4JATZ0750
R 8002	CARBON RES. 1/5W J 100 Ω or	1324101T
	CARBON RES. 1/6W J 100 Ω or	132A101T
	CARBON RES. 1/4W J 100 Ω	RCX4JATZ0101
R 8003	CARBON RES. 1/5W J 4.7K Ω or	1324472T
	CARBON RES. 1/6W J 4.7K Ω or	132A472T
	CARBON RES. 1/4W J 4.7K Ω	RCX4JATZ0472
R 8004	CARBON RES. 1/5W J 1.2K Ω or	1324122T
	CARBON RES. 1/6W J 1.2K Ω or	132A122T
	CARBON RES. 1/4W J 1.2K Ω	RCX4JATZ0122
R 8005	CARBON RES. 1/5W J 220 Ω or	1324221T
	CARBON RES. 1/6W J 220 Ω or	132A221T
	CARBON RES. 1/4W J 220 Ω	RCX4JATZ0221
R 8006	CARBON RES. 1/5W J 2.2K Ω or	1324222T
	CARBON RES. 1/6W J 2.2K Ω or	132A222T
	CARBON RES. 1/4W J 2.2K Ω	RCX4JATZ0222
R 8007	CARBON RES. 1/5W J 5.6K Ω or	1324562T
	CARBON RES. 1/6W J 5.6K Ω or	132A562T
	CARBON RES. 1/4W J 5.6K Ω	RCX4JATZ0562
R 8008	CARBON RES. 1/5W J 680 Ω or	1324681T
	CARBON RES. 1/6W J 680 Ω or	132A681T
	CARBON RES. 1/4W J 680 Ω	RCX4JATZ0681
R 8009	CARBON RES. 1/5W J 470 Ω or	1324471T
	CARBON RES. 1/6W J 470 Ω or	132A471T
	CARBON RES. 1/4W J 470 Ω	RCX4JATZ0471
R 8011	CARBON RES. 1/5W J 2.2K Ω or	1324222T
	CARBON RES. 1/6W J 2.2K Ω or	132A222T
	CARBON RES. 1/4W J 2.2K Ω	RCX4JATZ0222
R 8012	CARBON RES. 1/5W J 10K Ω or	1324103T
	CARBON RES. 1/6W J 10K Ω or	132A103T
	CARBON RES. 1/4W J 10K Ω	RCX4JATZ0103
R 8014	CARBON RES. 1/5W J 120 Ω or	1324121T
	CARBON RES. 1/6W J 120 Ω or	132A121T
	CARBON RES. 1/4W J 120 Ω	RCX4JATZ0121

ELECTRICAL REPLACEMENT PARTS LIST [VCR]

PRODUCT SAFETY NOTE: Products marked with a ⚠ have special characteristics important to safety. Before replacing any of these components, read carefully the product safety notice of this service manual. Don't degrade the safety of the product through improper servicing.

GENERAL NOTE: "C.B.A." is abbreviation for "Printed Circuit Board Assembly".
NOTE: Parts that not assigned part numbers (----------) are not available.

Tolerance of Capacitors and Resistors are noted with the following symbols.

C.....±0.25%	J.....±5%	Z.....+80/-20%
D.....±0.5%	K.....±10%	X.....+40/-20%
F.....±1%	M.....±20%	P.....+100%
G.....±2%	N.....±30%	

MCV C.B.A.

Ref. No.	Description	Part No.
	MCV C.B.A. JP380/2870 Consists of the following :	0VSA04933
	P.C.B. K2870/MCV	BK2870F01001
	MCV-A C.B.A.	----------
	MCV-B C.B.A.	----------
	MCV-C C.B.A.	----------
	MCV-D C.B.A.	----------
	MCV-E C.B.A.	----------
	MCV-F C.B.A.	----------
	MCV-G C.B.A.	----------

MCV-A C.B.A. (Main)

Ref. No.	Description	Part No.
	MCV-A C.B.A. Consists of the following :	----------
	CAPACITORS	
C 1501	ELECTROLYTIC CAP. 10µF/16V M	126C106S
C 1502	ELECTROLYTIC CAP. 47µF/16V M	126C476S
C 1503	ELECTROLYTIC CAP. 10µF/16V M	126C106S
C 1504	ELECTROLYTIC CAP. 10µF/16V M	126C106S
C 1505	ELECTROLYTIC CAP. 10µF/16V M	126C106S
C 2001	MYLAR CAP. 0.033µF/50V J	2254333S
C 2002	ELECTROLYTIC CAP. 100µF/6.3V M	126A107S
C 2003	ELECTROLYTIC CAP. 0.22µF/50V M	126F224S
C 2004	CERAMIC CAP. Y M 0.01µF/16V or	3Y4D103T
	CERAMIC CAP. F Z 0.01µF/16V	1220842T
C 2005	CERAMIC CAP. F Z 0.047µF/12V	32F1473S
C 2006	SEMICONDUCTOR CAP. SR K 0.047µF/25V	12Y2473S
C 2007	SEMICONDUCTOR CAP. SR K 0.047µF/25V	12Y2473S
C 2008	CERAMIC CAP. F Z 0.022µF/25V or	122Z122T
	CERAMIC CAP. F Z 0.022µF/25V	1220843T
C 2009	CERAMIC CAP. F Z 0.047µF/12V	32F1473S
C 2010	ELECTROLYTIC CAP. 100µF/6.3V M	126A107S
C 2011	ELECTROLYTIC CAP. 10µF/16V M	126C106S
C 2012	ELECTROLYTIC CAP. 10µF/16V M	126C106S
C 2013	ELECTROLYTIC CAP. 10µF/16V M LL	124H106S
C 2014	CERAMIC CAP. Y M 0.01µF/16V or	3Y4D103T
	CERAMIC CAP. F Z 0.01µF/16V	1220842T

Ref. No.	Description	Part No.
C 2015	ELECTROLYTIC CAP. 33µF/10V M	126B336S
C 2016	CERAMIC CAP. F Z 0.1µF/25V	1220520S
C 2017	ELECTROLYTIC CAP. 47µF/25V M	126D476S
C 2018	CERAMIC CAP. F Z 0.1µF/25V	1220520S
C 2019	CERAMIC CAP. F Z 0.1µF/25V	1220520S
C 2020	CERAMIC CAP. F Z 0.022µF/25V or	122Z122T
	CERAMIC CAP. F Z 0.022µF/25V	1220843T
C 2021	SEMI.-COND.-CAP. F Z 0.1µF/16V	1220522S
C 2022	ELECTROLYTIC CAP. 47µF/16V M	126C476S
C 2023	CERAMIC CAP. X K 0.0022µF/16V	3X4C222T
C 2024	ELECTROLYTIC CAP. 10µF/16V M	126C106S
C 2025	SEMICONDUCTOR CAP. SR K 0.047µF/25V	12Y2473S
C 2026	CERAMIC CAP. Y M 0.01µF/16V or	3Y4D103T
	CERAMIC CAP. F Z 0.01µF/16V	1220842T
C 2027	CERAMIC CAP. F Z 0.022µF/25V or	122Z122T
	CERAMIC CAP. F Z 0.022µF/25V	1220843T
C 2028	ELECTROLYTIC CAP. 1µF/50V M	126F105S
C 2029	ELECTROLYTIC CAP. 1µF/50V M	126F105S
C 2030	ELECTROLYTIC CAP. 1µF/50V M	126F105S
C 2031	CERAMIC CAP. F Z 0.022µF/25V or	122Z122T
	CERAMIC CAP. F Z 0.022µF/25V	1220843T
C 2032	ELECTROLYTIC CAP. 10µF/16V M	126C106S
C 2033	CERAMIC CAP. Y M 0.01µF/16V or	3Y4D103T
	CERAMIC CAP. F Z 0.01µF/16V	1220842T
C 2034	CERAMIC CAP. Y M 0.01µF/16V or	3Y4D103T
	CERAMIC CAP. F Z 0.01µF/16V.	1220842T
C 3201	ELECTROLYTIC CAP. 47µF/16V M	126C476S
C 3202	ELECTROLYTIC CAP. 1000µF/6.3V M	126A108S
C 3205	CERAMIC CAP. F Z 0.1µF/50V	3F40104T
C 4028	CERAMIC CAP. X K 0.0012µF/16V	3X4C122T
C 6001	CERAMIC CAP. SL J 22pF/50V	3S41220T
C 6002	CERAMIC CAP. SL J 27pF/50V	3S41270T
C 6003	CERAMIC CAP. Y M 0.01µF/16V or	3Y4D103T
	CERAMIC CAP. F Z 0.01µF/16V	1220842T
C 6004	ELECTROLYTIC CAP. 47µF/6.3V M H7	526R476S C 6005
	CERAMIC CAP. F Z 0.01µF/16V	1220842T
C 6006	ELECTROLYTIC CAP. 1000µF/6.3V M	126A108S

Ref. No.	Description	Part No.
C 6007	CERAMIC CAP. F Z 0.022µF/25V or	122Z122T
	CERAMIC CAP. F Z 0.022µF/25V	1220843T
C 6008	CERAMIC CAP. F Z 0.022µF/25V or	122Z122T
	CERAMIC CAP. F Z 0.022µF/25V	1220843T
C 6009	CERAMIC CAP. F Z 0.1µF/50V	3F40104T
C 6010	CERAMIC CAP. B J 100pF/50V	3B41101T
C 6011	CERAMIC CAP. F Z 0.033µF/12V or	1220887T
	CERAMIC CAP. F Z 0.033µF/16V	122Z790T
C 6012	CERAMIC CAP. F Z 0.033µF/12V or	1220887T
	CERAMIC CAP. F Z 0.033µF/16V	122Z790T
C 7001	ELECTROLYTIC CAP. 100µF/10V M	126B107S
C 7002	ELECTROLYTIC CAP. 0.47µF/50V M	126F474S
C 7003	CERAMIC CAP. F Z 0.1µF/50V	3F40104T
C 7004	MYLAR CAP. 0.1µF/50V J	2254104S
C 7005	MYLAR CAP. 0.15µF/50V J	2254154S
C 7006	MYLAR CAP. 0.15µF/50V J	2254154S
C 7007	ELECTROLYTIC CAP. 47µF/35V M	126E476S
C 7008	CERAMIC CAP. B J 120pF/50V	3B41121T
C 7009	ELECTROLYTIC CAP. 1µF/50V M	126F105S
C 7010	ELECTROLYTIC CAP. 1000µF/6.3V M	126A108S
C 7011	ELECTROLYTIC CAP. 470µF/16V M	126C477
C 7012	CERAMIC CAP. B J 330pF/50V	3B41331T
C 7013	ELECTROLYTIC CAP. 0.47µF/50V M	126F474S
C 7014	ELECTROLYTIC CAP. 1µF/50V M	126F105S
C 7015	CERAMIC CAP. B J 270pF/50V	3B41271T
C 7016	ELECTROLYTIC CAP. 0.47µF/50V M	126F474S
C 7017	CERAMIC CAP. B J 0.001µF/50V	3B41102T
C 7018	ELECTROLYTIC CAP. 47µF/16V M	126C476S
C 7019	ELECTROLYTIC CAP. 100µF/16V M	126C107S
C 7020	CERAMIC CAP. X K 0.0056µF/16V	3X4C562T
C 7021	ELECTROLYTIC CAP. 10µF/16V M	126C106S
C 7022	ELECTROLYTIC CAP. 10µF/16V M	126C106S
C 7023	ELECTROLYTIC CAP. 10µF/16V M	126C106S
C 7024	ELECTROLYTIC CAP. 0.47µF/50V M	126F474S
C 8001	SEMI.-COND.-CAP. F Z 0.1µF/16V	1220522S
C 8002	CERAMIC CAP. SL J 47pF/50V	3S41470T
C 8003	ELECTROLYTIC CAP. 10µF/16V M	126C106S
C 8005	ELECTROLYTIC CAP. 10µF/16V M	126C106S
C 8006	ELECTROLYTIC CAP. 100µF/6.3V M	126A107S
C 8008	CERAMIC CAP. B J 100pF/50V	3B41101T
C 8501	CERAMIC CAP. CH J 15pF/50V	3C41150T
C 8502	CERAMIC CAP. CH J 15pF/50V	3C41150T
C 8503	CERAMIC CAP. X K 0.0022µF/16V	3X4C222T
C 8504	CERAMIC CAP. X K 0.0047µF/16V	3X4C472T
C 8505	CERAMIC CAP. F Z 0.047µF/12V	32F1473S
C 8506	CERAMIC CAP. F Z 0.022µF/25V or	122Z122T
	CERAMIC CAP. F Z 0.022µF/25V	1220843T
C 8507	CERAMIC CAP. B J 220pF/50V	3B41221T
C 8509	CERAMIC CAP. SL J 15pF/50V	3S41150T
C 8510	CERAMIC CAP. SL J 30pF/50V	3S41300T
C 8511	CERAMIC CAP. F Z 0.022µF/25V or	122Z122T
	CERAMIC CAP. F Z 0.022µF/25V	1220843T
C 8512	ELECTROLYTIC CAP. 10µF/16V M	126C106S
C 8513	CERAMIC CAP. B J 0.001µF/50V	3B41102T
C 8514	CERAMIC CAP. B J 0.001µF/50V	3B41102T
	CONNECTORS	
CN1501	CONNECTOR ASS'Y 13P	WX1K2870-001
CN2002	FLOATING PIN CONNECTOR 10P TKC-M10P-A1	J3TKJ10TGH0F
CN3202	FLOATING PIN CONNECTOR 10P TKC-M10P-A1	J3TKJ10TGH0F
CN6001	FLOATING PIN CONNECTOR 14P TKC-M14P-A1	J3TKJ14TGH0F
CN6002	HINGED SOCKET CONNECTOR 8P TKC-B08X-E1	1700367
	DIODES	
D 1501	DIODE 1SS254 or	A1SS254T77**
	DIODE GMB01B	GMB01BT
D 1502	DIODE 1SS254 or	A1SS254T77**
	DIODE GMB01B	GMB01BT
D 1503	DIODE 1SS254 or	A1SS254T77**
	DIODE GMB01B	GMB01BT
D 1504	DIODE 1SS254 or	A1SS254T77**
	DIODE GMB01B	GMB01BT
D 2001	DIODE 1SS254 or	A1SS254T77**
	DIODE GMB01B	GMB01BT
D 2002	DIODE 1SS254 or	A1SS254T77**
	DIODE GMB01B	GMB01BT
D 2003	DIODE 1SS254 or	A1SS254T77**
	DIODE GMB01B	GMB01BT
D 2004	DIODE 1SS254 or	A1SS254T77**
	DIODE GMB01B	GMB01BT
D 2005	DIODE 1SS254 or	A1SS254T77**
	DIODE GMB01B	GMB01BT
D 2006	DIODE 1SS254 or	A1SS254T77**
	DIODE GMB01B	GMB01BT
D 2007	DIODE 1SS254 or	A1SS254T77**
	DIODE GMB01B	GMB01BT
D 2008	DIODE 1SS254 or	A1SS254T77**
	DIODE GMB01B	GMB01BT
D 3201	DIODE 1SS254 or	A1SS254T77**
	DIODE GMB01B	GMB01BT
D 6001	DIODE 1SS254 or	A1SS254T77**
	DIODE GMB01B	GMB01BT
D 6004	DIODE 1SS254 or	A1SS254T77**
	DIODE GMB01B	GMB01BT
D 6005	DIODE 1SS254 or	A1SS254T77**
	DIODE GMB01B	GMB01BT
D 6008	DIODE 1SS254 or	A1SS254T77**
	DIODE GMB01B	GMB01BT
D 6010	DIODE 1SS254 or	A1SS254T77**
	DIODE GMB01B	GMB01BT
D 6011	DIODE 1SS254 or	A1SS254T77**
	DIODE GMB01B	GMB01BT
D 6012	DIODE 1SS254 or	A1SS254T77**
	DIODE GMB01B	GMB01BT
D 7001	ZENER DIODE MTZ5.6B	AMTZ5R6BT77*
D 7002	DIODE 1SS254 or	A1SS254T77**
	DIODE GMB01B	GMB01BT
D 7003	DIODE 1SS254 or	A1SS254T77**
	DIODE GMB01B	GMB01BT
D 8001	DIODE 1SS254 or	A1SS254T77**
	DIODE GMB01B	GMB01BT
D 8002	ZENER DIODE MTZ5.6A or	AMTZ5R6A****
	ZENER DIODE MTZ5.6B or	AMTZ5R6B****
	ZENER DIODE MTZ5.6C	AMTZ5R6C****
D 8501	ZENER DIODE MTZ5.6A or	AMTZ5R6AT77*
	ZENER DIODE MTZ5.6B or	AMTZ5R6BT77*
	ZENER DIODE MTZ5.6C	AMTZ5R6CT77*

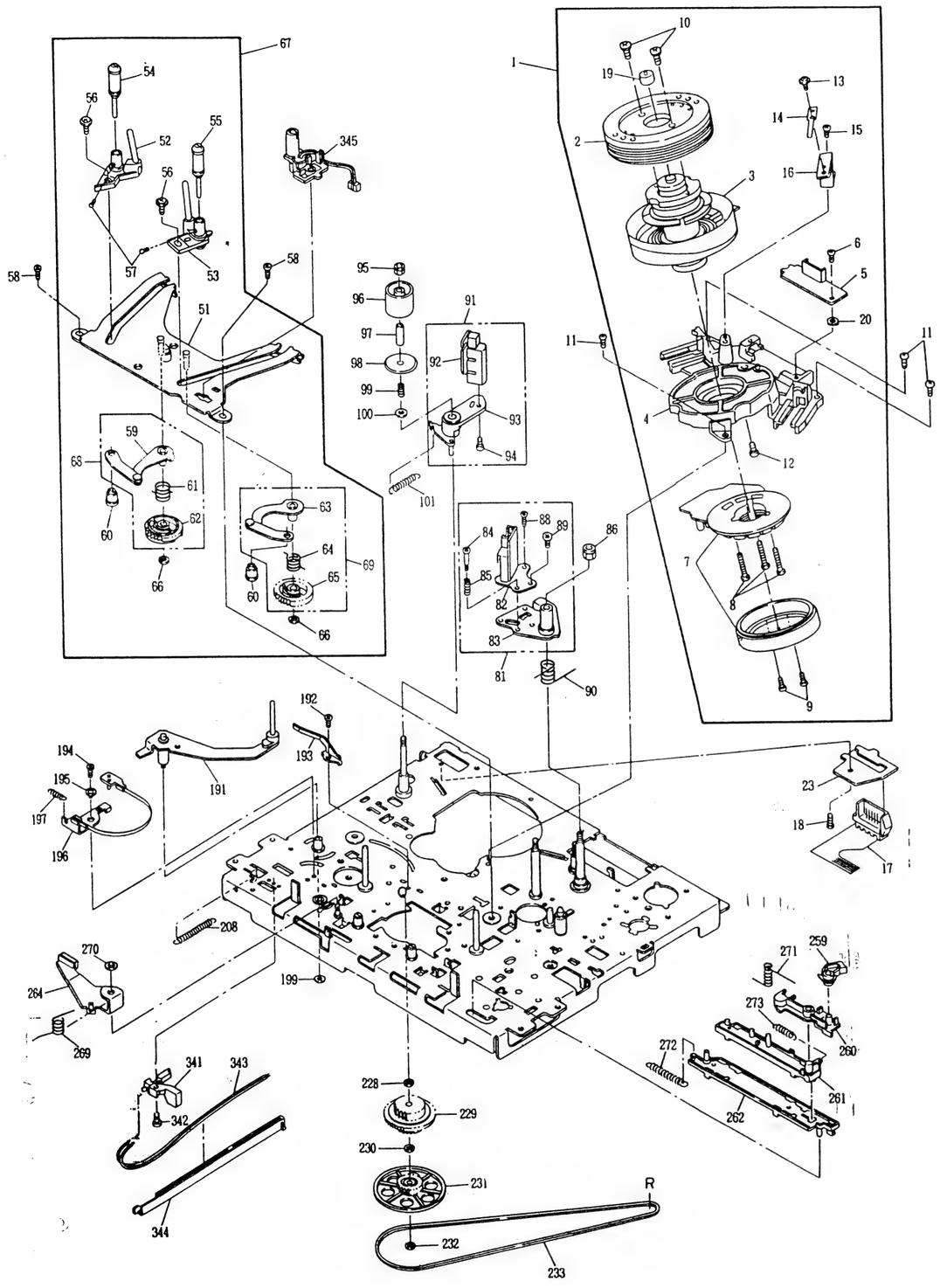
Ref. No.	Description	Part No.
	ICS	
IC1501	VOLTAGE REGULATOR IC AN78M05F or	AN78M05F
	VOLTAGE REGULATOR IC NJM78M05FA	J78M05FA
IC1502	VOLTAGE REGULATOR IC AN78M05F or	AN78M05F
	VOLTAGE REGULATOR IC NJM78M05FA	J78M05FA
IC2001	IC/SERVO EARM001	QSMEA0SRM001
IC2002	IC (OP-AMP.) BA10324A	QSBLA0SRM002
IC2003	IC (OP-AMP.) BA10324A	QSBLA0SRM002
IC2004	IC MOTOR DRIVER BA6219B	14LF232
IC2005	IC MOTOR DRIVER BA6209N	14LF492
IC6001	MICRO CONTROLER 4BIT SY/CXP50120- Q	QSMQA0RSN007
IC6002	IC RESET PST-529C-2	14D0665Z
IC6003	IC RESET IC-PST529F-2	GR591399****
IC6004	IC X24C01P	GX24C01P0000
IC7001	VOLTAGE REGULATOR IC AN78M09F or	AN78M09F
	VOLTAGE REGULATOR IC NJM78M09FA	14L0241
IC7002	IC (OP-AMP.) BA10324A	QSBLA0SRM002
IC7003	IC LA7210 or	14LQ115
	IC MM1021XS	GMM1021XS***
IC7004	IC L5631	L5631
IC8001	IC BU4053B	14DF268
IC8501	IC OSD UPD6450CX-519	QSMGA0SNE001
	COILS	
L 7001	INDUCTOR 330µH-K-26T	LLAXKDTKA331
L 8501	MICRO INDUCTOR 33µH-J-AXT	2164330T
	TRANSISTORS	
Q 1501	TRANSISTOR 2SA934(Q) or	A934QZ
	TRANSISTOR 2SA934(R)	A934RZ
Q 1502	RES. BUILT-IN TRANSISTOR DTC124ES or	C124ESZ
	RES. BUILT-IN TRANSISTOR 2SC3400	C3400Z
Q 1503	RES. BUILT-IN TRANSISTOR DTA143XS	A143XSZ
Q 1504	RES. BUILT-IN TRANSISTOR DTC124ES or	C124ESZ
	RES. BUILT-IN TRANSISTOR 2SC3400	C3400Z
Q 2001	RES. BUILT-IN TRANSISTOR DTC124ES or	C124ESZ
	RES. BUILT-IN TRANSISTOR 2SC3400	C3400Z
Q 2002	RES. BUILT-IN TRANSISTOR DTA124ES or	A124ESZ
	RES. BUILT-IN TRANSISTOR 2SA1346	A1346Z
Q 2003	RES. BUILT-IN TRANSISTOR DTC124ES or	C124ESZ
	RES. BUILT-IN TRANSISTOR 2SC3400	C3400Z
Q 2004	TRANSISTOR 2SA933(Q) or	A933QZ
	TRANSISTOR 2SA933(R) or	A933RZ
	TRANSISTOR 2SA608SP(E) or	A608SEZ
	TRANSISTOR 2SA608SP(F)	A608SFZ
Q 2005	RES. BUILT-IN TRANSISTOR DTC144ES	C144ESZ
Q 2006	TRANSISTOR 2SC1740(Q) or	C1740QZ
	TRANSISTOR 2SC1740(R) or	C1740RZ
	TRANSISTOR 2SC536SP(E) or	C536SEZ
	TRANSISTOR 2SC536SP(F)	C536SFZ
Q 3201	TRANSISTOR 2SA1317(S) or	A1317SZ
	TRANSISTOR 2SA1317(T)	A1317TZ
Q 6001	RES. BUILT-IN TRANSISTOR DTA124ES or	A124ESZ
	RES. BUILT-IN TRANSISTOR 2SA1346	A1346Z
Q 6002	RES. BUILT-IN TRANSISTOR DTA124ES or	A124ESZ
	RES. BUILT-IN TRANSISTOR 2SA1346	A1346Z
Q 6003	RES. BUILT-IN TRANSISTOR DTA124ES or	A124ESZ
	RES. BUILT-IN TRANSISTOR 2SA1346	A1346Z
Q 6004	RES. BUILT-IN TRANSISTOR DTC124ES or	C124ESZ
	RES. BUILT-IN TRANSISTOR 2SC3400	C3400Z

Ref. No.	Description	Part No.
Q 7001	TRANSISTOR 2SA933(Q) or	A933QZ
	TRANSISTOR 2SA933(R) or	A933RZ
	TRANSISTOR 2SA608SP(E) or	A608SEZ
	TRANSISTOR 2SA608SP(F)	A608SFZ
Q 7002	TRANSISTOR 2SC1740(Q) or	C1740QZ
	TRANSISTOR 2SC1740(R) or	C1740RZ
	TRANSISTOR 2SC536SP(E) or	C536SEZ
	TRANSISTOR 2SC536SP(F)	C536SFZ
Q 7003	RES. BUILT-IN TRANSISTOR DTA124ES or	A124ESZ
	RES. BUILT-IN TRANSISTOR 2SA1346	A1346Z
Q 7004	RES. BUILT-IN TRANSISTOR DTC124ES or	C124ESZ
	RES. BUILT-IN TRANSISTOR 2SC3400	C3400Z
Q 8002	TRANSISTOR 2SC1740(Q) or	C1740QZ
	TRANSISTOR 2SC1740(R) or	C1740RZ
	TRANSISTOR 2SC536SP(E) or	C536SEZ
	TRANSISTOR 2SC536SP(F)	C536SFZ
Q 8003	TRANSISTOR 2SC1740(Q) or	C1740QZ
	TRANSISTOR 2SC1740(R) or	C1740RZ
	TRANSISTOR 2SC536SP(E) or	C536SEZ
	TRANSISTOR 2SC536SP(F)	C536SFZ
Q 8004	TRANSISTOR 2SC1740(Q) or	C1740QZ
	TRANSISTOR 2SC1740(R) or	C1740RZ
	TRANSISTOR 2SC536SP(E) or	C536SEZ
	TRANSISTOR 2SC536SP(F)	C536SFZ
Q 8005	TRANSISTOR 2SC1740(Q) or	C1740QZ
	TRANSISTOR 2SC1740(R) or	C1740RZ
	TRANSISTOR 2SC536SP(E) or	C536SEZ
	TRANSISTOR 2SC536SP(F)	C536SFZ
Q 8006	RES. BUILT-IN TRANSISTOR DTA114TS	QQSZDTA114TS
Q 8501	RES. BUILT-IN TRANSISTOR DTC124ES or	C124ESZ
	RES. BUILT-IN TRANSISTOR 2SC3400	C3400Z
Q 8502	TRANSISTOR 2SC1740(Q) or	C1740QZ
	TRANSISTOR 2SC1740(R) or	C1740RZ
	TRANSISTOR 2SC536SP(E) or	C536SEZ
	TRANSISTOR 2SC536SP(F)	C536SFZ
	RESISTORS	
R 1501	CARBON RES. 1/5W J 100K Ω or	1324104T
	CARBON RES. 1/6W J 100K Ω or	132A104T
	CARBON RES. 1/4W J 100K Ω	RCX4JATZ0104
R 1502	CARBON RES. 1/5W J 560 Ω or	1324561T
	CARBON RES. 1/6W J 560 Ω or	132A561T
	CARBON RES. 1/4W J 560 Ω	RCX4JATZ0561
R 1503	CARBON RES. 1/5W J 1K Ω or	1324102T
	CARBON RES. 1/6W J 1K Ω or	132A102T
	CARBON RES. 1/4W J 1K Ω	RCX4JATZ0102
R 1504	CARBON RES. 1/5W J 3.3K Ω or	1324332T
	CARBON RES. 1/6W J 3.3K Ω or	132A332T
	CARBON RES. 1/4W J 3.3K Ω	RCX4JATZ0332
R 1505	CARBON RES. 1/5W J 2.2K Ω or	1324222T
	CARBON RES. 1/6W J 2.2K Ω or	132A222T
	CARBON RES. 1/4W J 2.2K Ω	RCX4JATZ0222
R 1506	METAL RES. 1W J 2.2 Ω	1330393
R 2001	CARBON RES. 1/5W J 150 Ω or	1324151T
	CARBON RES. 1/6W J 150 Ω or	132A151T
	CARBON RES. 1/4W J 150 Ω	RCX4JATZ0151
R 2002	CARBON RES. 1/5W J 22K Ω or	1324223T
	CARBON RES. 1/6W J 22K Ω or	132A223T
	CARBON RES. 1/4W J 22K Ω	RCX4JATZ0223

Ref. No.	Description	Part No.
R 2003	CARBON RES. 1/5W J 56K Ω or	1324563T
	CARBON RES. 1/6W J 56K Ω or	132A563T
	CARBON RES. 1/4W J 56K Ω	RCX4JATZ0563
R 2004	CARBON RES. 1/5W J 10K Ω or	1324103T
	CARBON RES. 1/6W J 10K Ω or	132A103T
	CARBON RES. 1/4W J 10K Ω	RCX4JATZ0103
R 2005	CARBON RES. 1/5W J 10K Ω or	1324103T
	CARBON RES. 1/6W J 10K Ω or	132A103T
	CARBON RES. 1/4W J 10K Ω	RCX4JATZ0103
R 2006	CARBON RES. 1/5W J 1M Ω or	1324105T
	CARBON RES. 1/6W J 1M Ω or	132A105T
	CARBON RES. 1/4W J 1M Ω	RCX4JATZ0105
R 2007	CARBON RES. 1/5W J 22K Ω or	1324223T
	CARBON RES. 1/6W J 22K Ω or	132A223T
	CARBON RES. 1/4W J 22K Ω	RCX4JATZ0223
R 2008	CARBON RES. 1/5W J 47K Ω or	1324473T
	CARBON RES. 1/6W J 47K Ω or	132A473T
	CARBON RES. 1/4W J 47K Ω	RCX4JATZ0473
R 2009	CARBON RES. 1/5W J 4.7K Ω or	1324472T
	CARBON RES. 1/6W J 4.7K Ω or	132A472T
	CARBON RES. 1/4W J 4.7K Ω	RCX4JATZ0472
R 2010	CARBON RES. 1/5W J 1K Ω or	1324102T
	CARBON RES. 1/6W J 1K Ω or	132A102T
	CARBON RES. 1/4W J 1K Ω	RCX4JATZ0102
R 2011	CARBON RES. 1/5W J 10K Ω or	1324103T
	CARBON RES. 1/6W J 10K Ω or	132A103T
	CARBON RES. 1/4W J 10K Ω	RCX4JATZ0103
R 2012	CARBON RES. 1/5W J 39K Ω or	1324393T
	CARBON RES. 1/6W J 39K Ω or	132A393T
	CARBON RES. 1/4W J 39K Ω	RCX4JATZ0393
R 2013	CARBON RES. 1/5W J 6.8K Ω or	1324682T
	CARBON RES. 1/6W J 6.8K Ω or	132A682T
	CARBON RES. 1/4W J 6.8K Ω	RCX4JATZ0682
R 2014	CARBON RES. 1/5W J 150K Ω or	1324154T
	CARBON RES. 1/6W J 150K Ω or	132A154T
	CARBON RES. 1/4W J 150K Ω	RCX4JATZ0154
R 2015	CARBON RES. 1/5W J 56K Ω or	1324563T
	CARBON RES. 1/6W J 56K Ω or	132A563T
	CARBON RES. 1/4W J 56K Ω	RCX4JATZ0563
R 2016	CARBON RES. 1/5W J 56K Ω or	1324563T
	CARBON RES. 1/6W J 56K Ω or	132A563T
	CARBON RES. 1/4W J 56K Ω	RCX4JATZ0563
R 2017	CARBON RES. 1/5W J 47K Ω or	1324473T
	CARBON RES. 1/6W J 47K Ω or	132A473T
	CARBON RES. 1/4W J 47K Ω	RCX4JATZ0473
R 2018	CARBON RES. 1/5W J 100K Ω or	1324104T
	CARBON RES. 1/6W J 100K Ω or	132A104T
	CARBON RES. 1/4W J 100K Ω	RCX4JATZ0104
R 2019	CARBON RES. 1/5W J 47K Ω or	1324473T
	CARBON RES. 1/6W J 47K Ω or	132A473T
	CARBON RES. 1/4W J 47K Ω	RCX4JATZ0473
R 2020	CARBON RES. 1/5W J 56K Ω or	1324563T
	CARBON RES. 1/6W J 56K Ω or	132A563T
	CARBON RES. 1/4W J 56K Ω	RCX4JATZ0563
R 2021	CARBON RES. 1/5W J 10K Ω or	1324103T
	CARBON RES. 1/6W J 10K Ω or	132A103T
	CARBON RES. 1/4W J 10K Ω	RCX4JATZ0103
R 2022	CARBON RES. 1/5W J 1K Ω or	1324102T
	CARBON RES. 1/6W J 1K Ω or	132A102T
	CARBON RES. 1/4W J 1K Ω	RCX4JATZ0102

Ref. No.	Description	Part No.
R 2023	CARBON RES. 1/5W J 4.7K Ω or	1324472T
	CARBON RES. 1/6W J 4.7K Ω or	132A472T
	CARBON RES. 1/4W J 4.7K Ω	RCX4JATZ0472
R 2024	CARBON RES. 1/5W J 1K Ω or	1324102T
	CARBON RES. 1/6W J 1K Ω or	132A102T
	CARBON RES. 1/4W J 1K Ω	RCX4JATZ0102
R 2025	CARBON RES. 1/5W J 56K Ω or	1324563T
	CARBON RES. 1/6W J 56K Ω or	132A563T
	CARBON RES. 1/4W J 56K Ω	RCX4JATZ0563
R 2026	CARBON RES. 1/5W J 3.6K Ω or	1324362T
	CARBON RES. 1/6W J 3.6K Ω or	132A362T
	CARBON RES. 1/4W J 3.6K Ω	RCX4JATZ0362
R 2027	CARBON RES. 1/5W J 15K Ω or	1324153T
	CARBON RES. 1/6W J 15K Ω or	132A153T
	CARBON RES. 1/4W J 15K Ω	RCX4JATZ0153
R 2028	CARBON RES. 1/5W J 56K Ω or	1324563T
	CARBON RES. 1/6W J 56K Ω or	132A563T
	CARBON RES. 1/4W J 56K Ω	RCX4JATZ0563
R 2029	CARBON RES. 1/5W J 39K Ω or	1324393T
	CARBON RES. 1/6W J 39K Ω or	132A393T
	CARBON RES. 1/4W J 39K Ω	RCX4JATZ0393
R 2030	CARBON RES. 1/5W J 39K Ω or	1324393T
	CARBON RES. 1/6W J 39K Ω or	132A393T
	CARBON RES. 1/4W J 39K Ω	RCX4JATZ0393
R 2031	CARBON RES. 1/5W J 47K Ω or	1324473T
	CARBON RES. 1/6W J 47K Ω or	132A473T
	CARBON RES. 1/4W J 47K Ω	RCX4JATZ0473
R 2032	CARBON RES. 1/5W J 3.3K Ω or	1324332T
	CARBON RES. 1/6W J 3.3K Ω or	132A332T
	CARBON RES. 1/4W J 3.3K Ω	RCX4JATZ0332
R 2033	CARBON RES. 1/5W J 820 Ω or	1324821T
	CARBON RES. 1/6W J 820 Ω or	132A821T
	CARBON RES. 1/4W J 820 Ω	RCX4JATZ0821
R 2034	CARBON RES. 1/5W J 100K Ω or	1324104T
	CARBON RES. 1/6W J 100K Ω or	132A104T
	CARBON RES. 1/4W J 100K Ω	RCX4JATZ0104
R 2035	METAL RES. 2W J 2.2 Ω or	1330458
	METAL RES. 2W J 2.2 Ω	1330343
R 2036	CARBON RES. 1/5W J 820 Ω or	1324821T
	CARBON RES. 1/6W J 820 Ω or	132A821T
	CARBON RES. 1/4W J 820 Ω	RCX4JATZ0821
R 2037	CARBON RES. 1/5W J 4.7K Ω or	1324472T
	CARBON RES. 1/6W J 4.7K Ω or	132A472T
	CARBON RES. 1/4W J 4.7K Ω	RCX4JATZ0472
R 2038	CARBON RES. 1/5W J 82K Ω or	1324823T
	CARBON RES. 1/6W J 82K Ω or	132A823T
	CARBON RES. 1/4W J 82K Ω	RCX4JATZ0823
R 2039	CARBON RES. 1/5W J 1.2K Ω or	1324122T
	CARBON RES. 1/6W J 1.2K Ω or	132A122T
	CARBON RES. 1/4W J 1.2K Ω	RCX4JATZ0122
R 2040	CARBON RES. 1/5W J 10K Ω or	1324103T
	CARBON RES. 1/6W J 10K Ω or	132A103T
	CARBON RES. 1/4W J 10K Ω	RCX4JATZ0103
R 2041	CARBON RES. 1/5W J 10K Ω or	1324103T
	CARBON RES. 1/6W J 10K Ω or	132A103T
	CARBON RES. 1/4W J 10K Ω	RCX4JATZ0103
R 2042	CARBON RES. 1/5W J 10K Ω or	1324103T
	CARBON RES. 1/6W J 10K Ω or	132A103T
	CARBON RES. 1/4W J 10K Ω	RCX4JATZ0103

DECK EXPLODED VIEW (Drawing No. 1)



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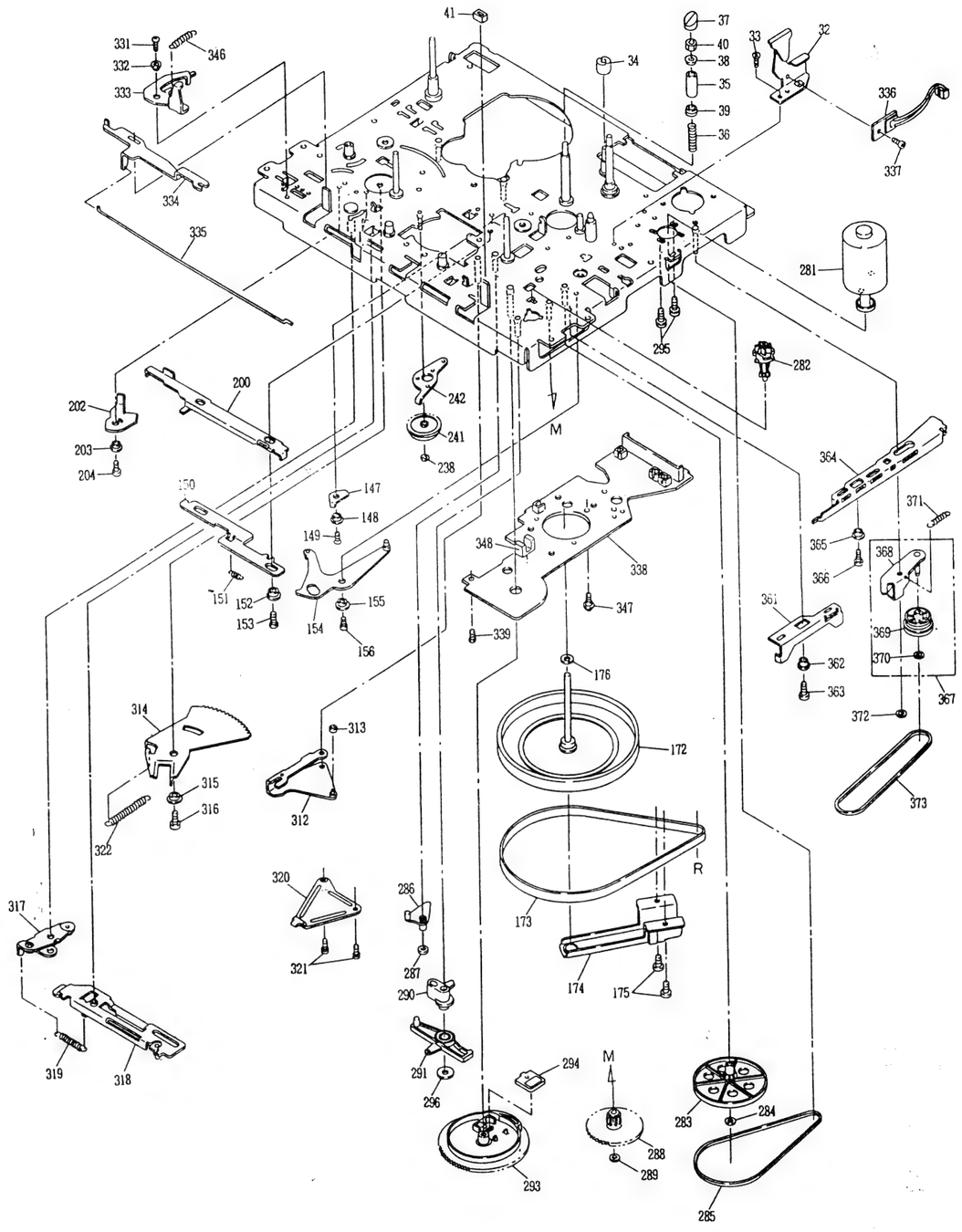
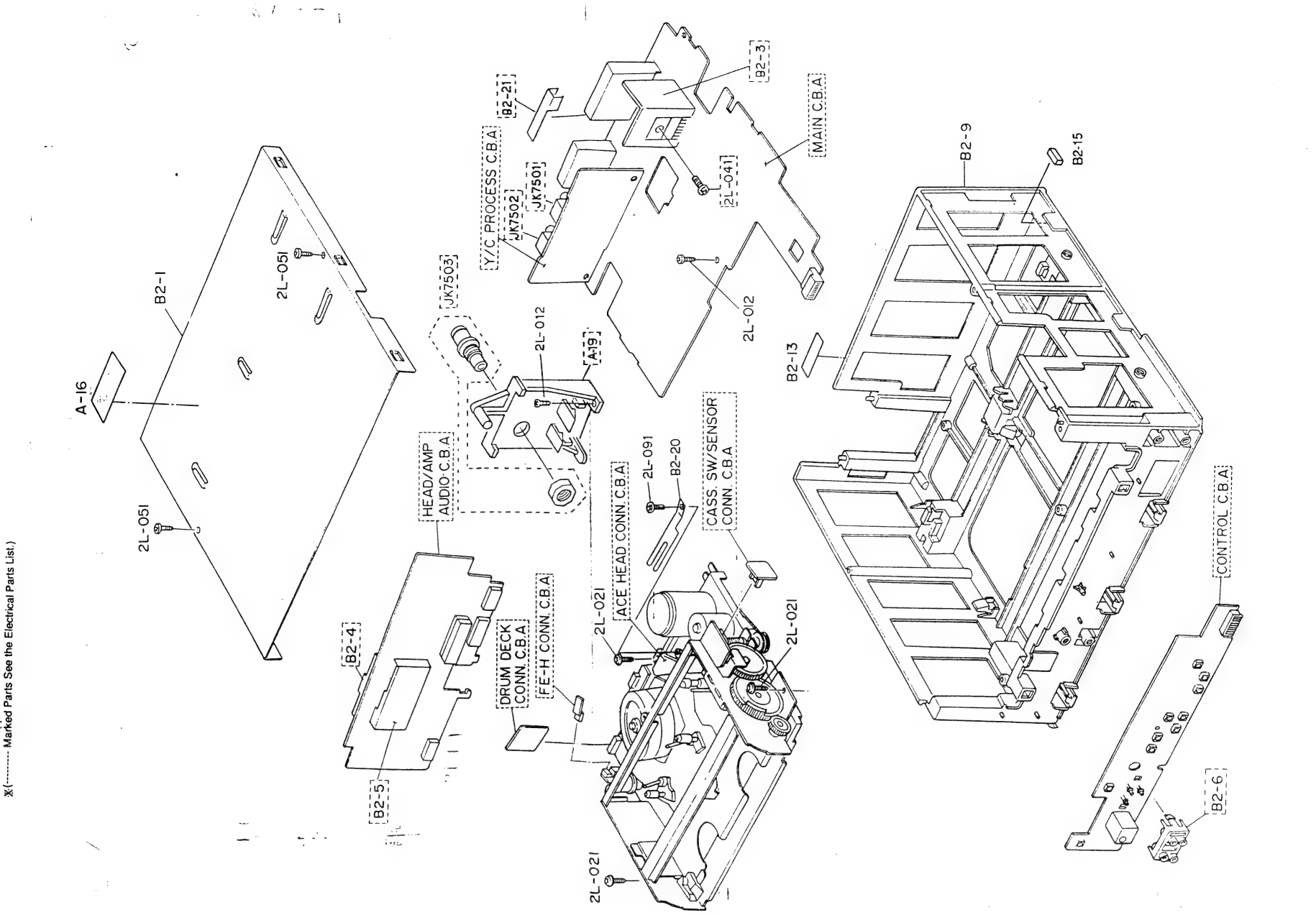


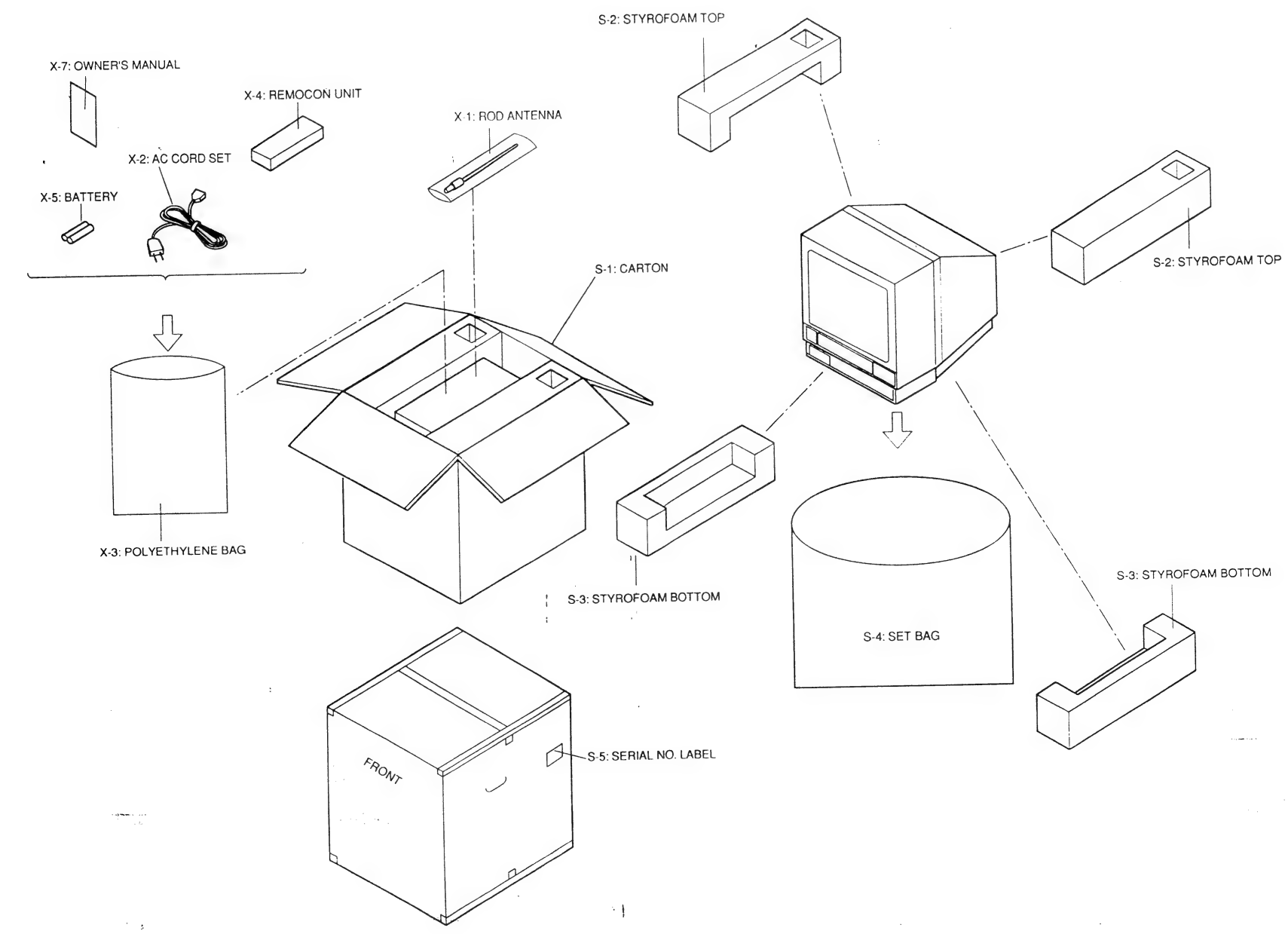
506EXP

CABINET EXPLODED VIEW [VCR]



K2870EX2

PACKING EXPLODED VIEW



B6407PAC

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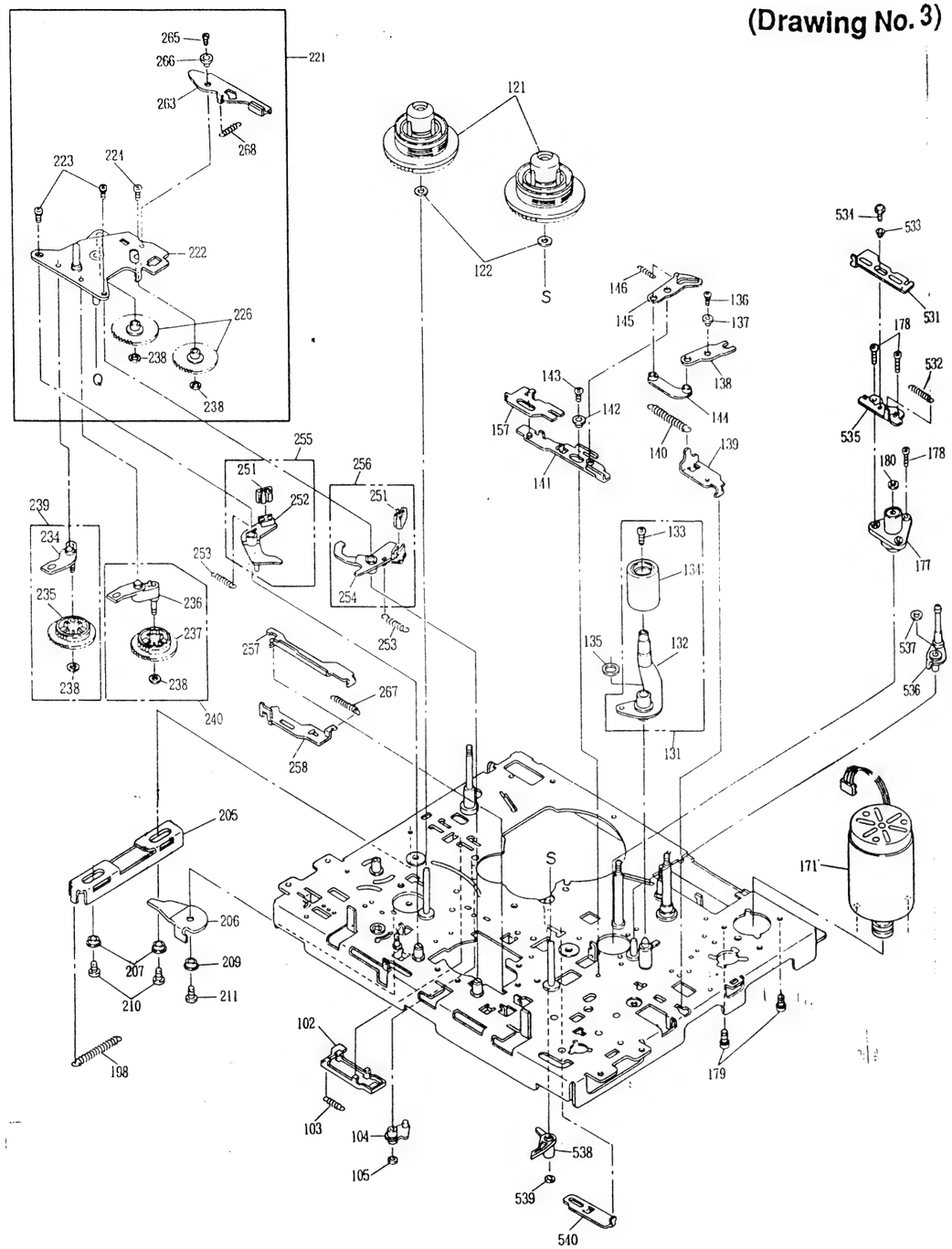

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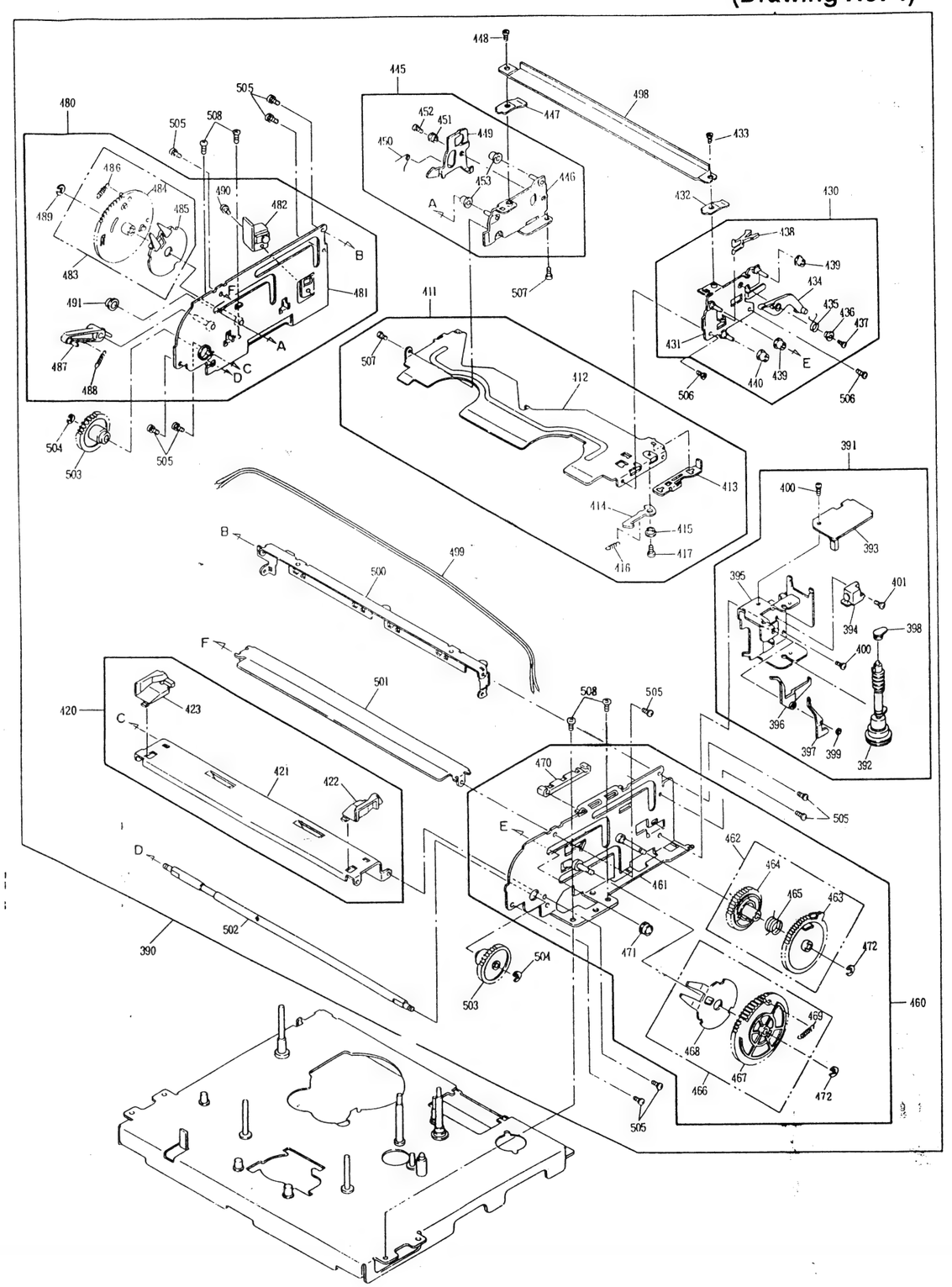

506EXP

MECHANICAL REPLACEMENT PARTS LIST [VCR]

Ref. No.	Description	Part No.
A- 16	LABEL CHASSIS NO. K2874RA	0VM404211
A- 19	(See Electrical Replacement Parts List)	
B2- 1	COVER, TOP ASS'Y K1880UA	0VM201132
B2- 3	(See Electrical Replacement Parts List)	
B2- 4	(See Electrical Replacement Parts List)	
B2- 5	(See Electrical Replacement Parts List)	
B2- 6	(See Electrical Replacement Parts List)	
B2- 9	CHASSIS K1870UA	0VM000015
B2- 13	T.P CUSHION K1803UA	0VM403356
B2- 15	CHASSIS SPACER K1870UA	0VM403736
B2- 20	PLATE, GROUND VD4841	6S50212
B2- 21	(See Electrical Replacement Parts List)	
2L- 012	SCREW, P-TIGHT, BIND HEAD 3X10	GBMP3100
2L- 021	SCREW, P-TIGHT, WASHER HEAD 3X10	GCMP3100
2L- 041	(See Electrical Replacement Parts List)	
2L- 051	SCREW, P-TIGHT, BIND HEAD 3X10	GBMP3100
2L- 091	SCREW, SEMS, PAN HEAD M3X5	CPM33050
	LABEL, SERIAL NO. VD5004	6E50105
	DECK ASS'Y TN5900P1NRM554	0VDK00085

MECHANICAL REPLACEMENT PARTS LIST [TV]

Ref. No.	Description	Part No.
TA- 1	FRONT CABINET	0EM100329
TA- 2	MOUNING BOSS A	0EM400077
TA- 3	REAR CABINET	0EM100330
TA- 4	CONTROL DOOR	0EM300501
TA- 5	DOOR PLATE	0EM401303
TA- 6	POWER KNOB	0EM400164
TA- 7	S/E KNOB	0EM400095
TA- 8	PLATE A	0EM401304
TA- 9	PLATE B	0EM401305
TA- 10	CONTROL PLATE	0EM300431
TA- 11	CASSETTE DOOR	0EM300437
TA- 12	LATCH VD7762	6D51218
TA- 13	LED PLATE	0EM401310
TA- 14	RATING LABEL	0EM401306
TA- 15	BRAND BADGE	0EM400975
TA- 16	MAIN POWER KNOB EM40656	21NH251
TB- 1	PCB HOLDER	0EM000061
TB- 2	TENSION SPRING EM40808	26WH006
TB- 3	CRT MOUNTING SCREW K42419	8A00083
TB- 4	DOOR SPRING	0EM400105
TB- 5	DOOR CUSHION	0EM400106
TB- 6	CLOTH TS7346	24WE420

TL- 1	P- TIGHT SCREW BRASSIRE+ M3X8	GFMP3080
TL- 2	P- TIGHT SCREW BRASSIRE+ M3X8	GLMP3080
TL- 3	S- TIGHT SCREW CUP+ M3X8	GFMS3080
TL- 5	B- TIGHT SCREW BIND+ M3X8	GBMB3080
TL- 6	B- TIGHT SCREW BIND+ M3X8	GBMB3080
TL- 7	B- TIGHT SCREW BIND+ M3X8	GBMB3080
TL- 8	B- TIGHT SCREW BIND+ M3X16	GBMB3160
TL- 10	TAPPING SCREW BIND+ M4X14	DBM14140
TL- 12	P- TIGHT SCREW BIND+ M3X16	GBKP3160
TL- 13	P- TIGHT SCREW BIND+ M3X10	GBKP3100
TL- 14	P- TIGHT SCREW PAN HEAD+ M3.5X10	GBKPT100
TL- 16	P- TIGHT SCREW BIND+ M4X18	GBMP4180
S- 1	CARTON	0EM401307
S- 2	STYROFOAM TOP	0EM000053
S- 3	STYROFOAM BOTTOM	0EM000050
S- 4	SET BAG	0EM300173
S- 5	SERIAL NO. LABEL EM40416	24LH033
X- 1	ROD ANTENNA	0EMN00542
X- 2	AC CORD SET	WAE0182LW001
X- 3	POLYETHYLENE BAG	Z325350
X- 4	REMOTE CONTROL UNIT	UREMT29MS006
X- 5	DRY BATTERY "R03" 2PCS PACK or	1790902
	DRY BATTERY "R03" 2PCS PACK or	XB0M641FA001
	DRY BATTERY "R03" 2PCS PACK or	579W100
	DRY BATTERY "R03" 2PCS PACK	1790741
X- 7	OWNER'S MANUAL	0EMN00556

K2874CA

DECK REPLACEMENT PARTS LIST

Ref. No.	Drawing No.	Description	Q'ty	Part No.
1	1	Cylinder Assembly (Consists of 2~10, 12~16, 20)	1	8059-72-40A
2	1	Drum, Upper	1	8059-01-19
3	1	Drum Assembly, Lower	1	8059-01-304
4	1	Mount, Cylinder	1	8059-01-01
5	1	P.C.B. Assembly, Video Out	1	8059-01-305
6	1	Screw, W Sems, M2.6 x 6	1	9973-00-00
7	1	Motor	1	6004-09-02
8	1	Screw, C-tight, M2.6 x 20	3	9055-00-00
9	1	Screw, Sems, M2.6 x 6	2	9098-00-00
10	1	Screw, Bind Sems, M3 x 8	2	9972-00-00
11	1	Screw, C-tight, M3 x 10	3	9205-00-00
12	1	Screw, B-tight M2 x 5	1	9999-18-18
13	1	Screw, Cap, M2 x 3	1	9665-00-00
☆14	1	Flat Spring Ground, Drum	1	8059-01-54
15	1	Screw, C-tight, M2.6 x 5	1	9192-00-00
16	1	Bracket, Drum Ground	1	8059-01-02
17	1	P.C.B. Assembly, DM	1	8059-01-347
18	1	Screw, C-tight, M2.6 x 5	1	9192-00-00
☆19	1	Drum Ground	1	8059-01-23
20	1	Washer, Toothed Lock, M2.6	1	9715-00-00
23	1	Connector Bracket	1	8059-01-71
32	2	Open Angle	1	8059-02-301
33	2	Screw, C-tight, M2.6 x 4	1	9191-00-00
34	2	Adjuster, Tracking	1	8059-02-29
35	2	Guide, Tape	1	8000-03-14
36	2	Spring, Tape Guide	1	8059-02-26
37	2	Cap, Guide	1	8000-03-19
38	2	Flange (C), Tape Guide	1	8000-03-28
39	2	Flange (D), Tape Guide	1	8000-03-29
40	2	Nut M3.0	1	9453-00-00
41	2	Rubber, Damper	1	8059-02-23
51	1	Loading Base	1	8059-03-501
52	1	Block (L), Loading	1	8059-03-04
53	1	Block (R), Loading	1	8059-03-05
54	1	Roller Post ST	1	8000-03-37
55	1	Roller Post ST	1	8000-03-37
56	1	Screw, Cup, M2.6 x 3	2	9665 00 00
57	1	Screw, Set, M2.0 x 3 (Plane Type)	2	9550-00-00
58	1	Screw, C-tight, M2.6 x 5	2	9192-00-00
59	1	Plate (L), Loading	1	8059-03-502
60	1	Boss, Loading	2	8059-03-14
61	1	Spring (L), Loading Gear	1	8059-03-08
62	1	Gear (L), T Loading	1	8059-03-06
63	1	Plate (R), Loading	1	8059-03-503
64	1	Spring (R), Loading Gear	1	8059-03-09
65	1	Gear (R), T Loading	1	8059-03-07
66	1	Washer, Polyslider ø2.6 x ø6 x t0.5	2	9884-00-00
67	1	Loading Base Assembly (Consists of 51~57, 60, 66, 68, 69)	1	8059-03-301
68	1	Loading Gear (L) Assembly (Consists of 59, 61~62)	1	8059-03-302
69	1	Loading Gear (R) Assembly (Consists of 63~65)	1	8059-03-303
81	3	Head Base Assembly (Consists of 82~85, 88~89)	1	8059-04-308
82	3	Head, ACE	1	6204-15-06

NOTE: ☆ Items 14 and 19 must be replaced together.

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Ref. No.	Drawing No.	Description	Q'ty	Part No.
83	3	Base, Head	1	8059-04-502
84	3	Screw, Azimuth Spring	1	8000-06-26
85	3	Spring, Azimuth	1	8000-06-04
86	3	Nut, Nylon M3	1	9953-00-00
88	3	Screw, M2.6 x 7	1	9705-00-00
89	3	Screw, Set, M3 x 6	1	9999-20-25
90	3	Spring, Head	1	8059-04-15
91	3	Plate Assembly, Full Erase (Consists of 92~94)	1	8059-04-302
92	3	Head, Full Erase	1	6204-15-03
93	3	Plate, Full Erase	1	8059-04-04
94	3	Screw, Flange Bind, M2 x 3	1	9114-00-00
95	3	Nut, Nylon M3	1	9953-00-00
96	3	Roller, Impedance	1	8059-04-05
97	3	Sleeve, Impedance Roller	1	8059-04-06
98	3	Flange (A), Tape Guide	1	8059-04-07
99	3	Spring, Tape Guide Flange	1	8059-04-09
100	3	Washer, Plane ø3 x ø8 x t0.5	1	9337-00-00
101	3	Spring, FE Plate	1	8059-04-08
102	3	Plate, FE Slide	1	8059-04-10
103	3	Spring, FE Actuate	1	8059-04-12
104	3	Lever, FE Actuate	1	8059-04-11
105	3	Washer, Polyslider ø2.1 x ø5 x t0.5	1	9876-00-00
121	3	Reel Assembly	2	8059-05-301
122	3	Washer, ø3.1 x ø6 x t0.5	2	9912-00-00
131	3	Arm Assembly, Pinch Roller (Consists of 132~134)	1	8059-06-301
132	3	Arm, Pinch Roller	1	8059-06-501
133	3	Screw, M2.6 x 4	1	9038-00-00
134	3	Roller (A), Pinch	1	8000-09-22
135	3	Washer, Polyslider, ø5 x ø8 x t0.5	1	9999-03-11
136	3	Screw, Sems, M2.6 x 4	1	9096-00-00
137	3	Collar	1	8059-06-18
138	3	Angle, P Actuate	1	8059-06-05
139	3	Holder, P Angle	1	8059-06-19
140	3	Spring, P Roller	1	8059-06-20
141	3	Plate (A), P Slide	1	8059-06-24
142	3	Collar	1	8059-06-18
143	3	Screw, C-tight, M2.6 x 5	1	9192-00-00
144	3	Joint Plate	1	8059-06-06
145	3	Arm, P Actuate	1	8059-06-04
146	3	Spring, P Actuate Arm	1	8059-06-09
147	2	Crank, P	1	8059-06-12
148	2	Collar, P Crank	1	8059-06-13
149	2	Screw, C-tight FH (For Camera), M2.6 x 4	1	9999-18-10
150	2	Slider, P	1	8059-06-10
151	2	Spring, P Slider	1	8059-06-23
152	2	Collar, P Slider	1	8059-06-11
153	2	Screw, C-tight, M2.6 x 5	1	9192-00-00
154	2	Lever, P Cam	1	8059-06-502
155	2	Collar, P Cam Lever	1	8059-06-17
156	2	Screw, C-tight, M2.6 x 5	1	9192-00-00
157	3	Plate (B), P Slide	1	8059-06-25
171	3	Motor Assembly, Capstan	1	8059-07-302
172	2	Capstan, Flywheel	1	8059-07-14
173	2	Belt, Main	1	8059-07-10
174	2	Angle Assembly, Flywheel	1	8059-07-303
175	2	Screw, C-tight, M3 x 5	2	9202-00-00
176	2	Washer, ø3.1 x ø6 x t0.5	1	9912-00-00
177	3	Housing Assembly, Metal	1	8059-07-301
178	3	Screw, C-tight, M2.6 x 8	3	9195-00-00

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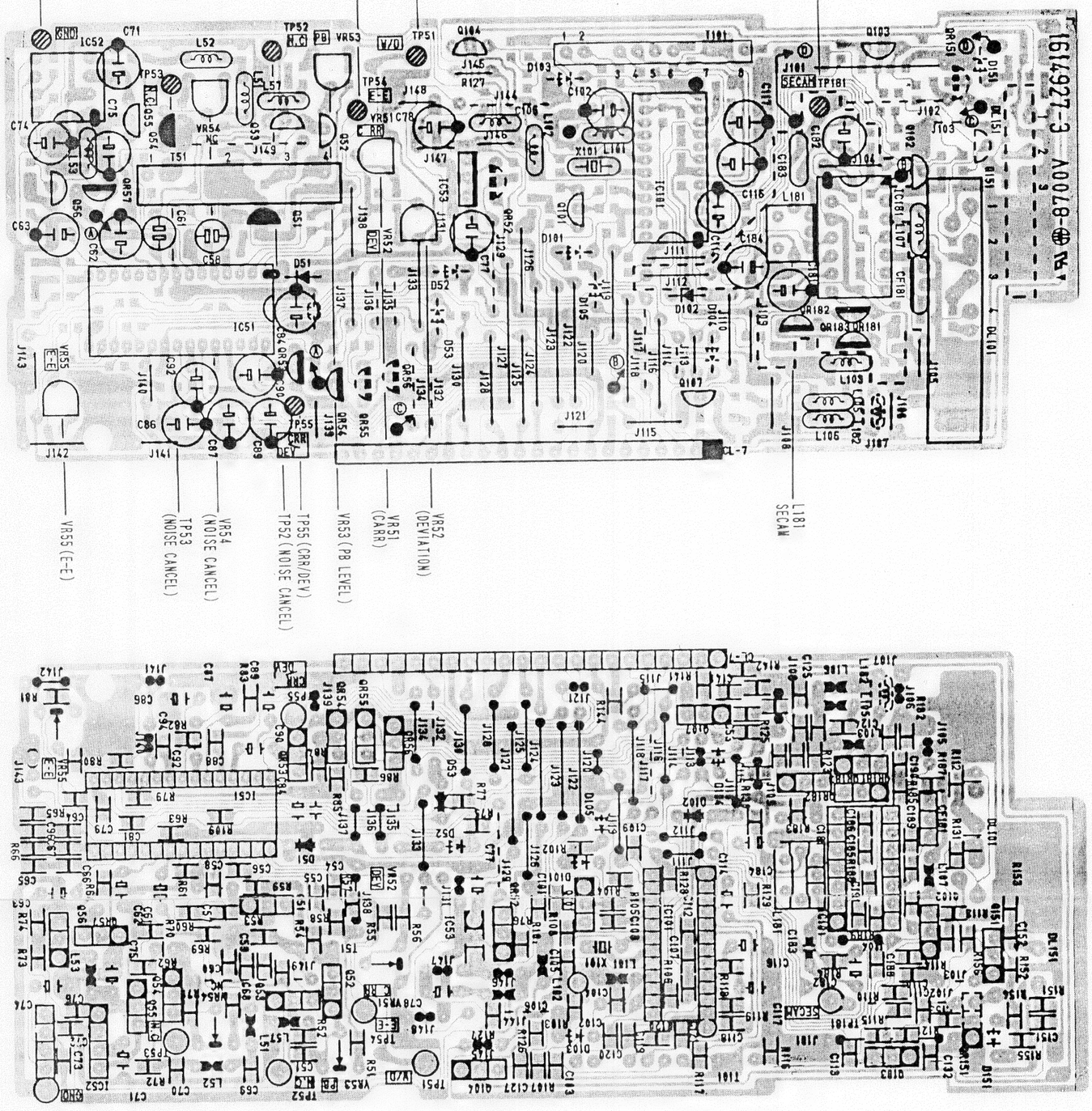
Ref. No.	Drawing No.	Description	Q'ty	Part No.
179	3	Screw, Sems, M3 x 4	2	9105-00-00
180	3	Nylon Washer 2.92 x 5 x 0.5	1	9999-06-03
191	3	Arm, Back Tension	1	8059-08-501
192	3	Screw, C-tight, M2.6 x 4	1	9191-00-00
193	3	Support, Back Tension	1	8059-08-09
194	3	Screw, C-tight, M2.6 x 4	1	9191-00-00
195	3	Collar, Band Holder	1	8059-08-15
196	3	Band, BT	1	8059-08-302
197	3	Spring, Band Holder	1	8059-08-17
198	1	Spring, Back Tension	1	8059-08-13
199	3	Washer, Polyslider, ø2.1 x ø4 x t0.5	1	9999-03-15
200	2	Plate, BT Change	1	8059-08-10
202	2	Lever, BT Return	1	8059-08-23
203	2	Collar	1	8059-06-18
204	2	Screw, C-tight, M2.6 x 5	1	9192-00-00
205	1	Plate, BT Actuate	1	8059-08-19
206	1	Lever, BT Actuate	1	8059-08-18
207	1	Collar, BT Actuate Plate	2	8059-08-21
208	3	Spring, BT Actuate Plate	1	8059-08-20
209	1	Collar	1	8059-06-18
210	1	Screw, S-tight (For Camera) M2.6 x 3.5	2	9840-00-00
211	1	Screw, C-tight M2.6 x 5	1	9192-00-00
221	3	Plate Assembly (Consists of 222~224, 226, 238, 263, 265~266, 268)	1	8059-09-312
222	3	Plate Semi Assembly	1	8059-09-503
223	3	Screw, Sems, M2 x 4	2	9077-00-00
224	3	Screw, C-tight, M2.6 x 4	1	9192-00-00
226	3	Gear, Reel Drive	2	8059-09-06A
228	3	Washer, Nylon, ø3.1 x ø6 x t0.3	1	9853-00-00
229	3	Clutch Assembly	1	8059-09-311
230	3	Washer, Nylon, ø2.98 x ø6 x t0.3	1	9999-06-04
231	3	Pulley Assembly, Middle	1	8059-09-301
232	3	Washer, Polyslider, ø2.6 x ø6 x t0.5	1	9884-00-00
233	3	Belt, Drive	1	8059-09-17
234	3	Arm Assembly, P Gear	1	8059-09-303
235	3	Gear, Play	1	8059-09-20A
236	3	Arm Assembly, RF Gear	1	8059-09-304
237	3	Gear, FF	1	8059-09-22A
238	2,3	Washer, Polyslider, ø1.6 x ø3.8 x t0.3	3	9743-00-00
239	3	Gear Assembly, P (Consists of 234~235, 238)	1	8059-09-314
240	3	Gear Assembly, RF (Consists of 236~238)	1	8059-09-315
241	2	Return Gear Assembly	1	8059-09-313
242	2	Retrun Arm	1	8059-09-53
251	3	Shoe, Brake	2	8059-10-19
252	3	Arm, S Brake	1	8059-10-01
253	3	Spring, Brake Arm	2	8059-10-02
254	3	Arm, T Brake	1	8059-10-03
255	3	Arm Assembly, S Brake (Consists of 251, 252)	1	8059-10-301
256	3	Arm Assembly, T Brake (Consists of 251, 254)	1	8059-10-302
257	3	Lifter, Brake	1	8059-10-16
258	3	Actuator, L Brake	1	8059-10-17
259	3	Hook, Trigger	1	8059-10-14
260	3	Lever, Trigger	1	8059-10-13
261	3	Plate, Brake	1	8059-10-11
262	3	Brake Actuate, Base	1	8059-10-09
263	3	Brake, Take-up soft	1	8059-10-303
264	3	Brake, S Soft	1	8059-10-304
265	3	Screw, SL FH (For Camera), M2 x 3	1	9974-00-00
266	3	Collar, Take-up Soft Brake Arm	1	8059-10-07
267	3	Spring, L Brake Actuator	1	8059-10-18

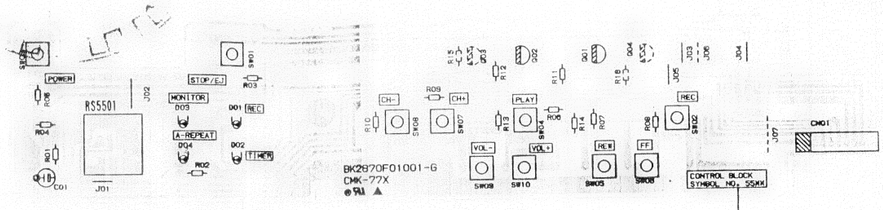
N2NRM554

Y/C Process C.B.A. (Top View)



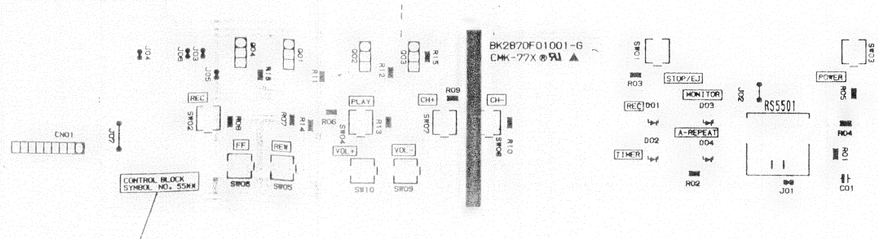
Y/C Process C.B.A. (Bottom View)

Control C.B.A. (Top View)



Control C.B.A. (Bottom View)

Symbol numbers are shown one(1) and two (2) digit(s) in this area abbreviation of 5500 series except jumper wires.

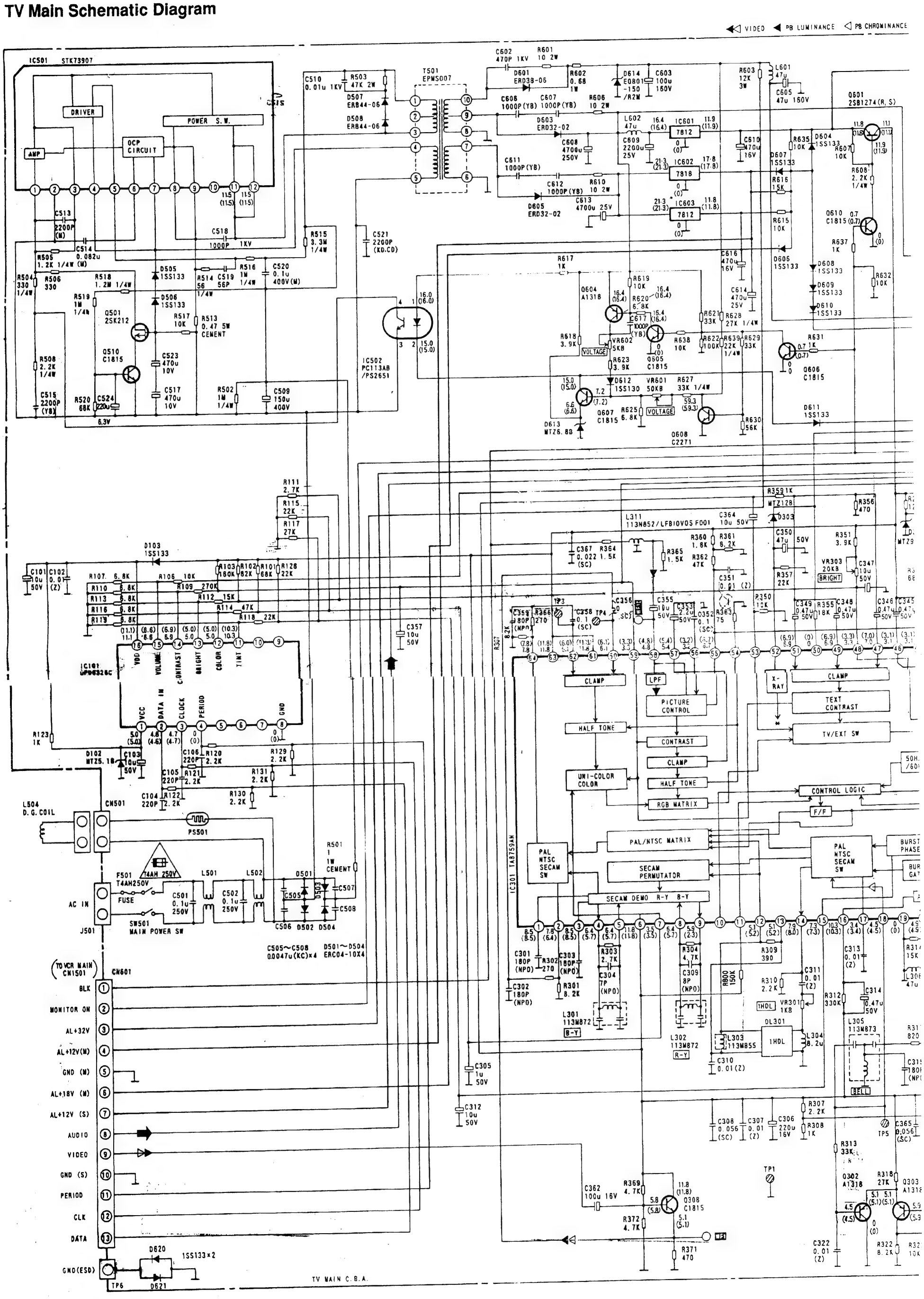


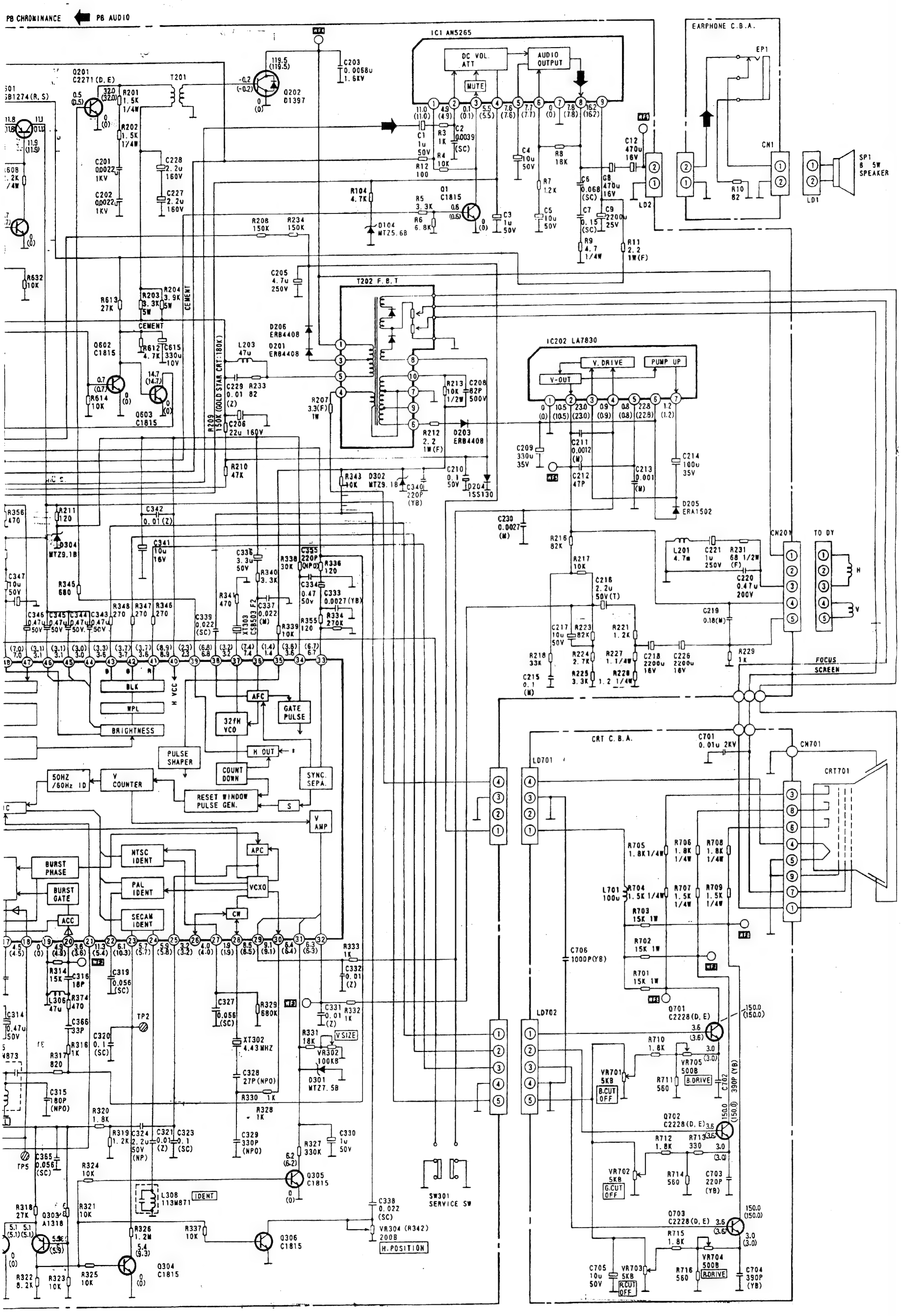
Symbol numbers are shown one(1) and two (2) digit(s) in this area abbreviation of 5500 series except jumper wires.

BK2870F01001-G

1614927-3

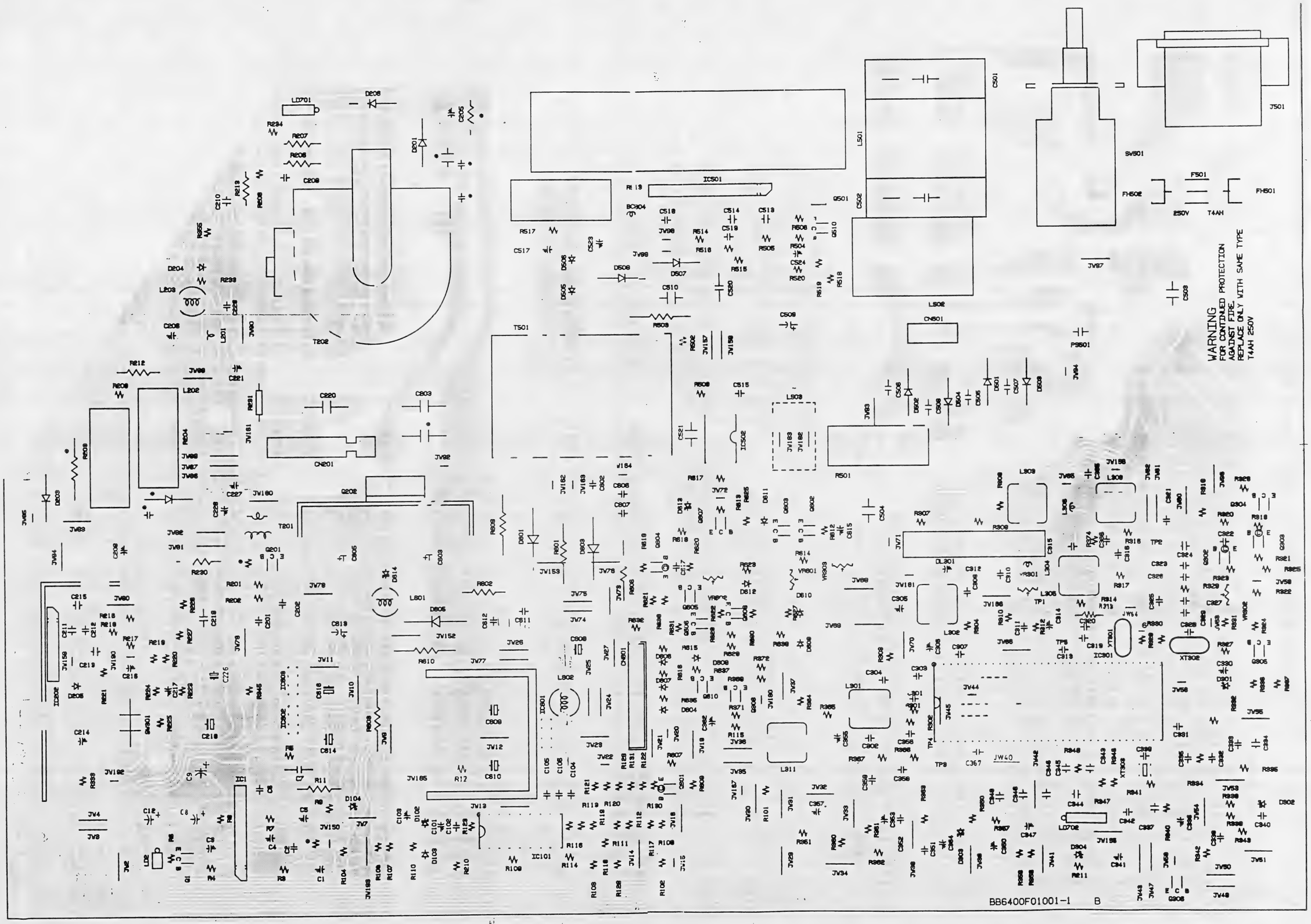
TV Main Schematic Diagram




PB CHROMINANCE
PB AUDIO
IC1 AN5265
DC VOL. ATT
AUDIO OUTPUT
MUTE
EARPHONE C.B.A.
EP1
CN1
SP1 8Ω 5W SPEAKER
LD1
LD2
Q201 C2271 (D, E)
T201
Q202 D1397
C203 0.0068u 1.6KV
C1 1u 50V
C2 0.0039 (SC)
R3 1K
R4 10K
R12 100
C4 10u 50V
R8 18K
R7 1.2K
C5 10u 50V
C6 0.068 (SC)
C7 0.15 (SC)
C8 470u 16V
C9 2200u 25V
C12 470u 16V
R9 4.7 1/4W
R11 2.2 1W(F)
Q1 C1815
R5 3.3K
R6 6.8K
C3 1u 50V
R104 4.7K
D104 MTZ5.68
R208 150K
R234 150K
C205 4.7u 250V
T202 F.B.T
D206 ERB4408
D201 ERB4408
D203 ERB4408
D204 1SS130
R207 3.3(F) 1W
R212 2.2 1W(F)
R213 10K 1/2W
C208 82P 500V
C210 0.1 50V
R210 47K
R343 10K
D302 MTZ9.1B
C340 220P (YB)
IC202 LA7830
V. DRIVE
PUMP UP
V-OUT
C209 330u 35V
C211 0.0012 (M)
C212 47P
C213 0.001 (M)
C214 100u 35V
D205 ERA1502
C230 0.0027 (M)
R216 82K
R217 10K
C216 2.2u 50V(T)
L201 4.7m
C221 1u 250V
R231 68 1/2W (F)
C220 0.47u 200V
C219 0.18(M)
C217 10u 50V
R223 82K
R221 1.2K
R218 33K
R224 2.7K
R227 1.1/4W
R225 3.3K
R228 1.2 1/4W
C218 2200u 16V
C226 2200u 16V
R229 1K
C215 0.1 (M)
CN201
TO DY
H
V
FOCUS
SCREEN
CRT C.B.A.
C701 0.01u 2KV
CN701
CRT701
LD701
LD702
R705 1.8K 1/4W
R706 1.8K 1/4W
R708 1.8K 1/4W
L701 100u
R704 1.5K 1/4W
R707 1.5K 1/4W
R709 1.5K 1/4W
R703 15K 1W
R702 15K 1W
R701 15K 1W
C706 1000P(YB)
Q701 C2228 (D, E)
R710 1.8K
VR705 500B B.DRIVE
VR701 5KB B.CUT OFF
R711 560
C702 390P (YB)
Q702 C2228 (D, E)
R712 1.8K
R713 330
VR702 5KB G.CUT OFF
R714 560
C703 220P (YB)
Q703 C2228 (D, E)
R715 1.8K
VR704 500B R.DRIVE
R716 560
C704 390P (YB)
VR703 5KB R.CUT OFF
C705 10u 50V
R632 10K
R613 27K
R203 3.3K 5W
R204 3.9K 5W
CEMENT
Q602 C1815
R614 10K
R612 4.7K
C615 330u 10V
Q603 C1815
L203 47u
C229 0.01 (Z)
R233 82
C206 22u 160V
R209 150K (GOLD STAR CRT:180K)
C201 0.0022 1KV
C202 0.0022 1KV
R201 1.5K 1/4W
R202 1.5K 1/4W
C228 2.2u 160V
C227 2.2u 160V
R211 120
D304 MTZ9.1B
C342 0.01 (Z)
C341 10u 16V
C347 10u 50V
R345 680
C346 0.47u 50V
C345 0.47u 50V
C344 0.47u 50V
C343 0.47u 50V
R348 270
R347 270
R346 270
C339 0.022 (SC)
C335 220P (NPO)
R336 120
C334
C333 0.0027 (YB)
R334 270K
R355 120
R339 10K
R338 30K
R340 3.3K
C336 3.3u 50V
C337 0.022 (M)
R341 470
XT303 CSB503 F2
R356 470
BLK
WPL
BRIGHTNESS
H VCC
AFC
32fH VCO
GATE PULSE
PULSE SHAPER
H OUT
COUNT DOWN
SYNC. SEPA.
50HZ /60Hz ID
V COUNTER
RESET WINDOW PULSE GEN.
S
V AMP
APC
VCXO
NTSC IDENT
PAL IDENT
SECAM IDENT
CW
BURST PHASE
BURST GATE
ACC
R314 15K
C316 18P
L306 47u
R374 470
C366 33P
R316 1K
R317 820
C315 180P (NPO)
C314 0.47u 50V
C319 0.056 (SC)
C320 0.1 (SC)
TP2
C327 0.056 (SC)
R329 680K
XT302 4.43MHZ
C328 27P (NPO)
R330 1K
R328 1K
R331 18K
VSIZE
VR302 100KB
D301 MTZ7.5B
R333 1K
C332 0.01 (Z)
C331 0.01 (Z)
R332 1K
R320 1.8K
R319 1.2K
C324 2.2u 50V (NP)
C321 0.01 (Z)
C323 0.1 (SC)
C329 330P (NPO)
R327 330K
C330 1u 50V
TP5
C365 0.056 (SC)
R324 10K
Q305 C1815
L308 113M871
IDENT
R318 27K
Q303 A1318
R321 10K
R326 1.2M
R337 10K
Q306 C1815
C338 0.022 (SC)
VR304 (R342) 200B
H.POSITION
Q304 C1815
R322 8.2K
R323 10K
R325 10K
SW301 SERVICE SW

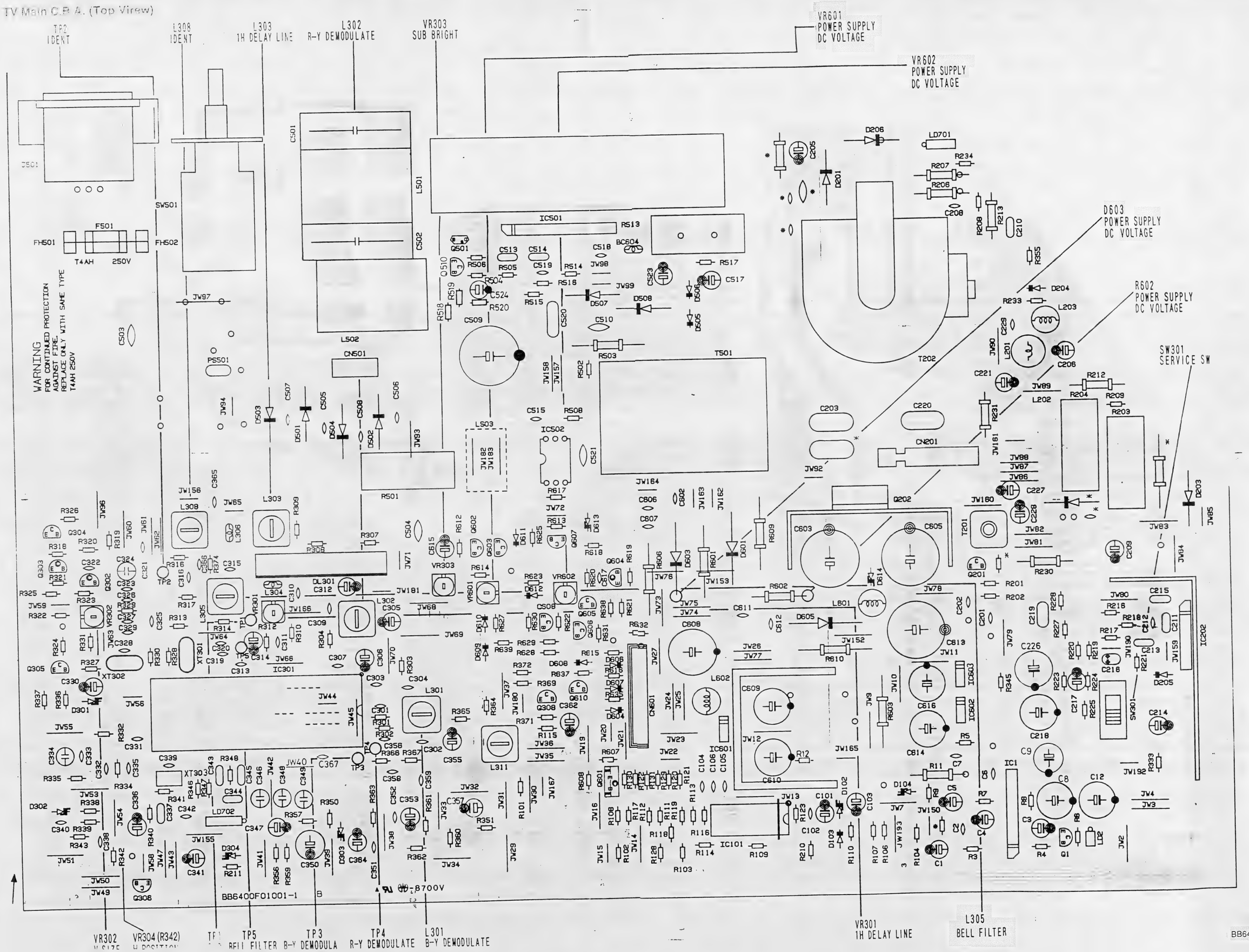
B6407SC-TV

TV Main C.B.A. (Bottom View)



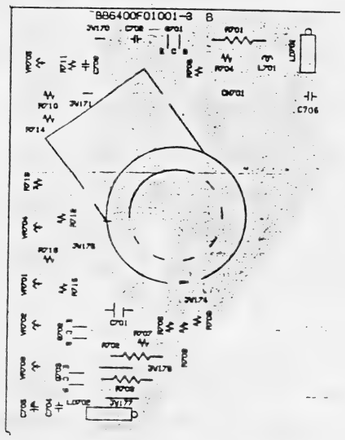
BB6400F01001

TV Main C.B.A. (Top View)

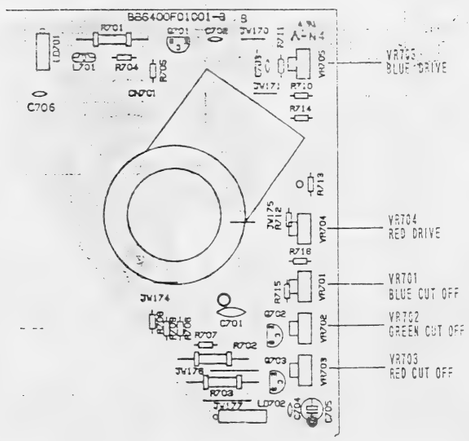


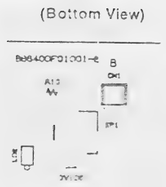
VCR Main C.B.A. (Top View)

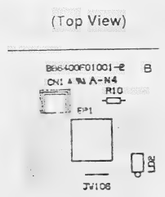
(Bottom View)

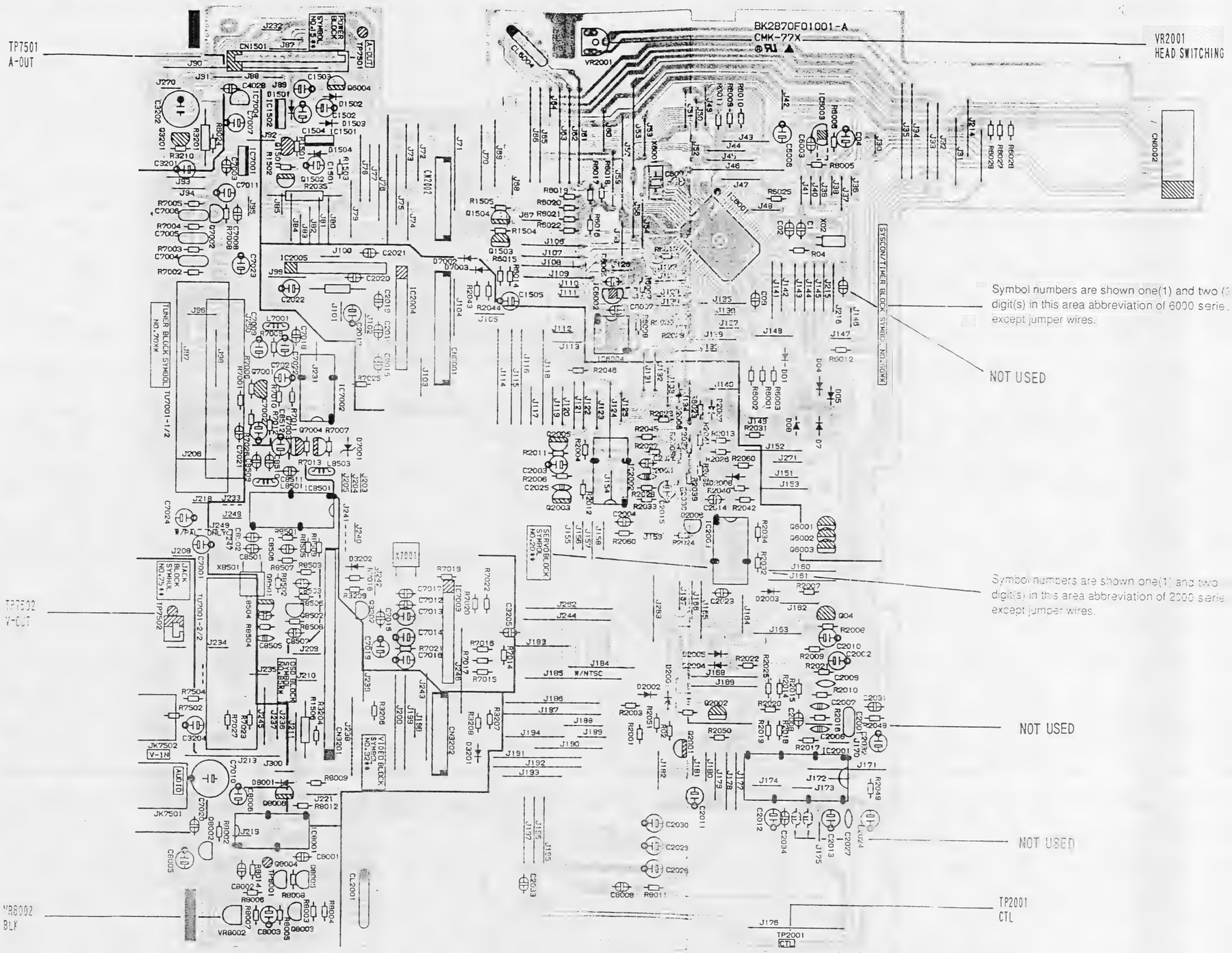


(Top View)

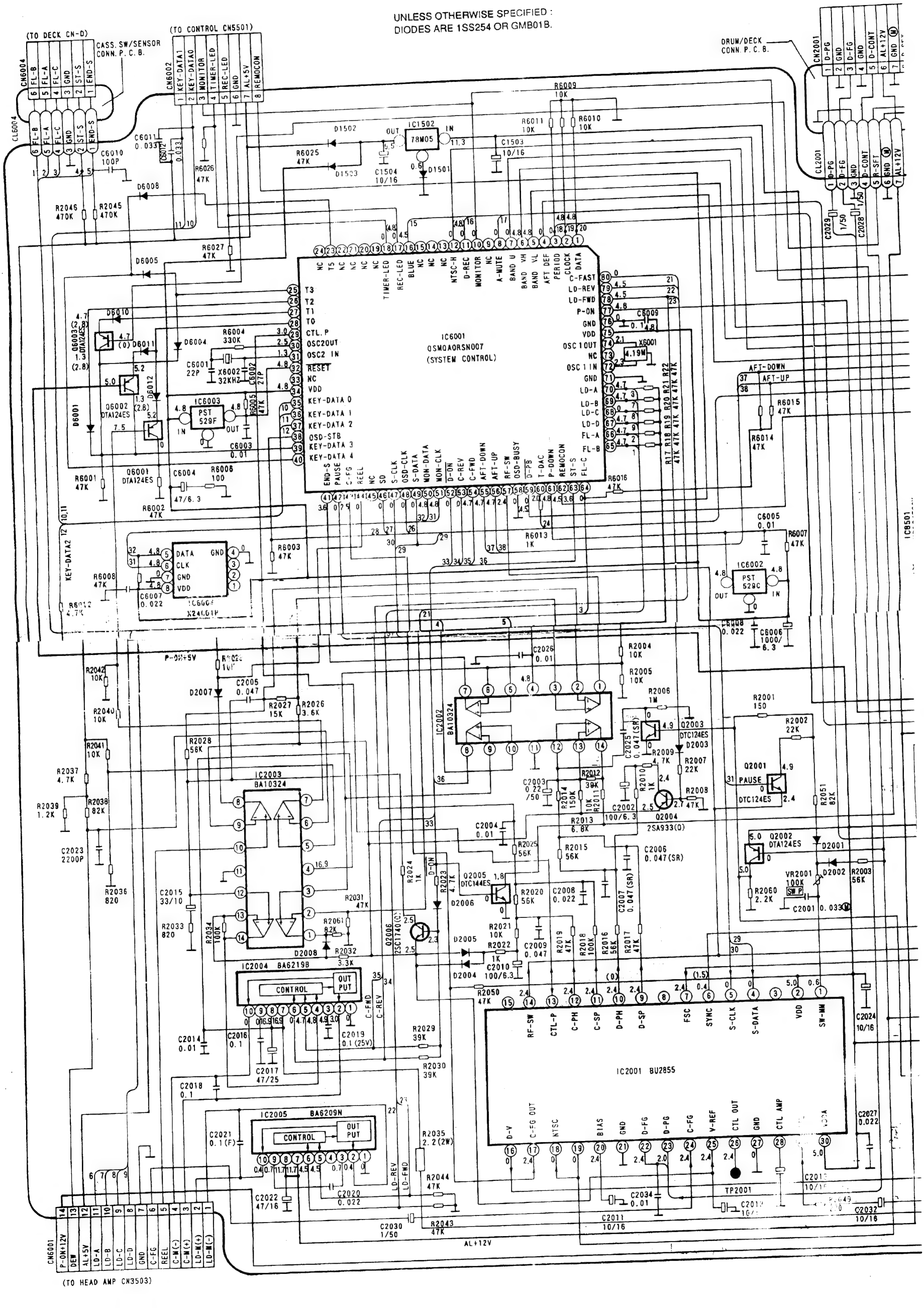








VCR Main Schematic Diagram



◀ PB LUMINANCE ◁ PB CHROMINANCE ⋘ REC LUMINANCE ⋘ REC CHROMINANCE ⇦ REC AUDIO

TU7001-2/2

JK7503 ANT

IC7001 78M09

IC7003 LA7210

IC8501 UPD6450CX

IC7002 BA10324

D7001 MTZ5.6B

D8501 MTZ5.6B

D7003

D8001

IC8001 BU4053B

Q8001 DTC124ES

Q8002 2SC1740(Q)

Q8003 2SC1740(Q)

Q8004 2SC1740(Q)

Q8005 2SC1740(Q)

Q8006 DTA114TS

Q7001 2SA933(Q)

Q7002 2SC1740(Q)

Q7003 DTA124ES

Q7004 DTC124ES

Q1501 2SA933(Q)

Q1502 DTC124ES

Q1503 DTA143XS

Q1504 DTC124ES

Q3201 2SA1517(S)

Q6004 DTC124ES

P-ON+12V

P-ON+5V

T-DAT

SD

JK7501 A-IN

JK7502 V-IN

TP7501 A-OUT

TP7502 V-OUT

CN1501

1	BLK
2	MONITOR-ON
3	AL+32V
4	AL+12V(M)
5	GND Ⓜ
6	AL+18V(M)
7	AL+12V(S)
8	A-OUT
9	V-OUT
10	GND Ⓢ
11	PER100
12	CLOCK
13	DATA

(TO TV SECTION)

CN2002

1	CTL
2	CTL GND
3	GND
4	A-IN
5	D-REC
6	D-PB
7	A-OUT
8	NC
9	NC
10	A-MUTE

(TO HEAD AMP CN4003)

CN3201

1	P-ON+12V
2	D-PB+5V
3	RF-SW
4	NC
5	REC-H
6	C-REC
7	C-PB
8	GND
9	Y-REC
10	Y-PB
11	P-ON+5V
12	SYNC
13	D-V
14	4.43MHZ
15	NC
16	P-ON+9V
17	V-IN
18	NC
19	NTSC-H
20	NC
21	GND
22	V-OUT

(TO Y/C PROCESS CN3001)

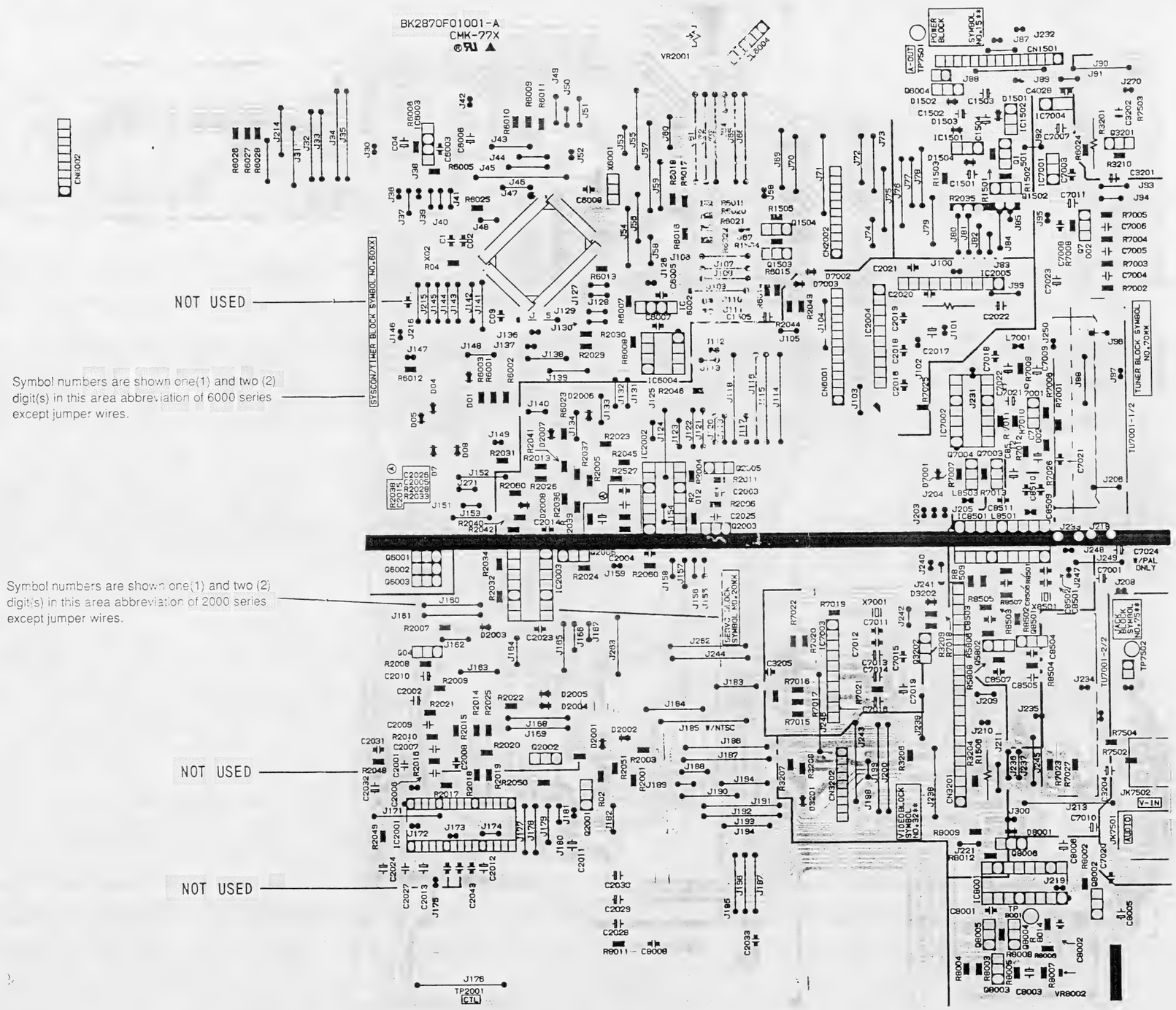
CN3202

1	NC
2	D-REC+12V
3	GND
4	P-ON+5V
5	Y-REC
6	C-PB
7	C-REC
8	RF-SW
9	Y-PB
10	NTSC-H

(TO HEAD AMP CN3501)

K2870SC-MAIN

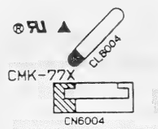
VCR Main C.B.A. (Bottom View)



BK2870F01001-A

CASS.SW/Sensor Conn. C.B.A.

(Top View)

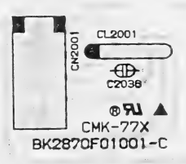


(Bottom View)

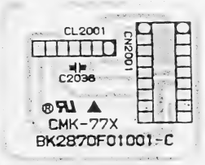
BK2870F01001-B

Drum Deck Conn. C.B.A.

(Top View)

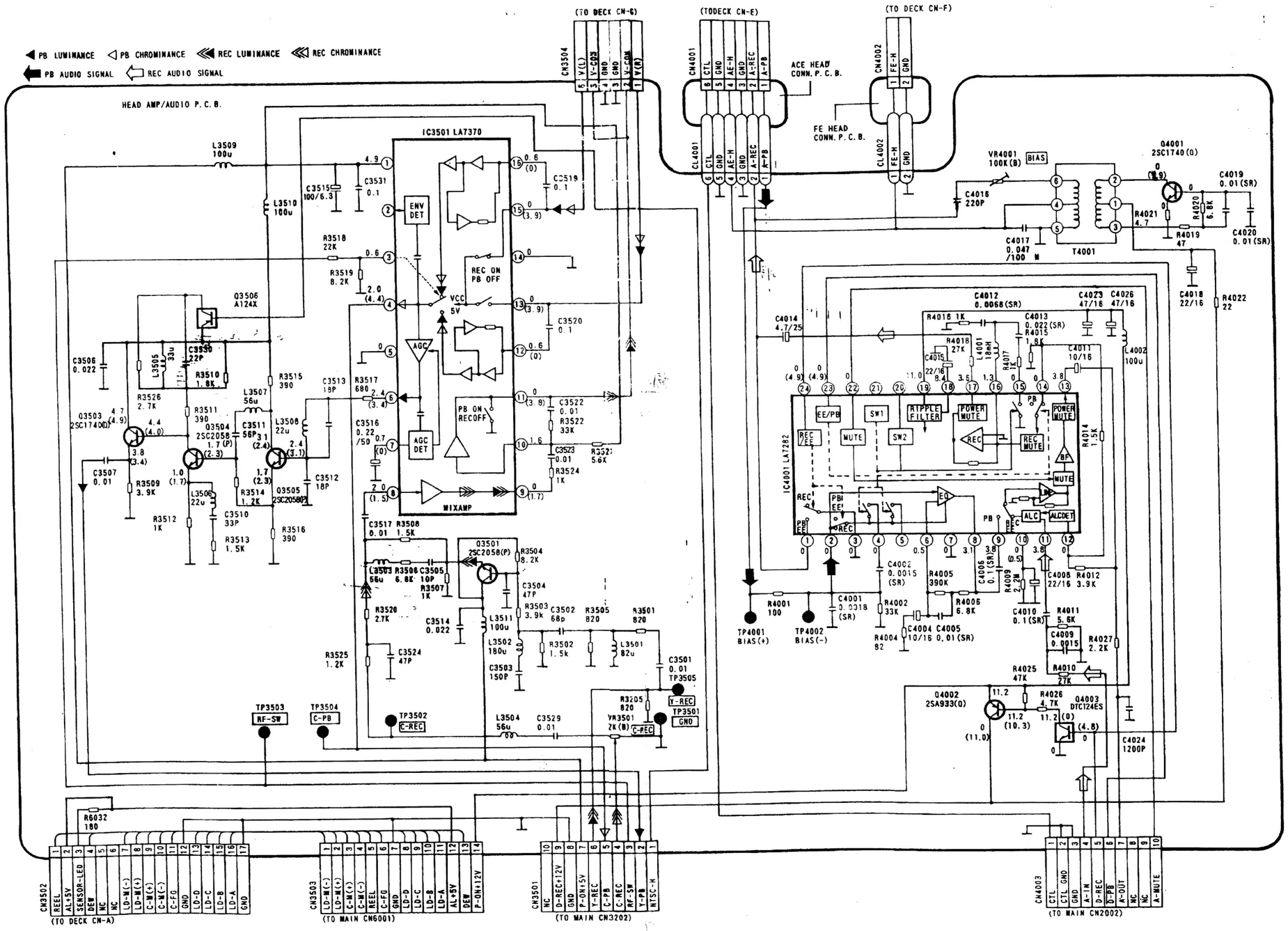


(Bottom View)



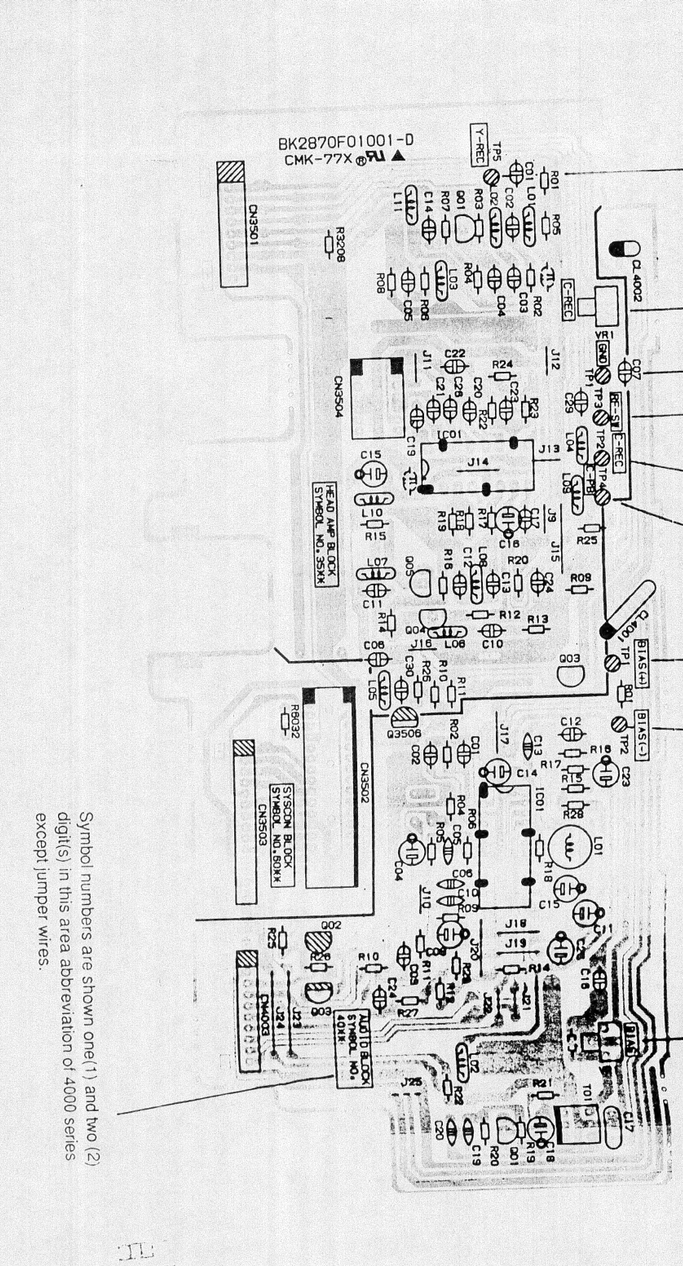
BK2870F01001-C

Head Amp /Audio Schematic Diagram



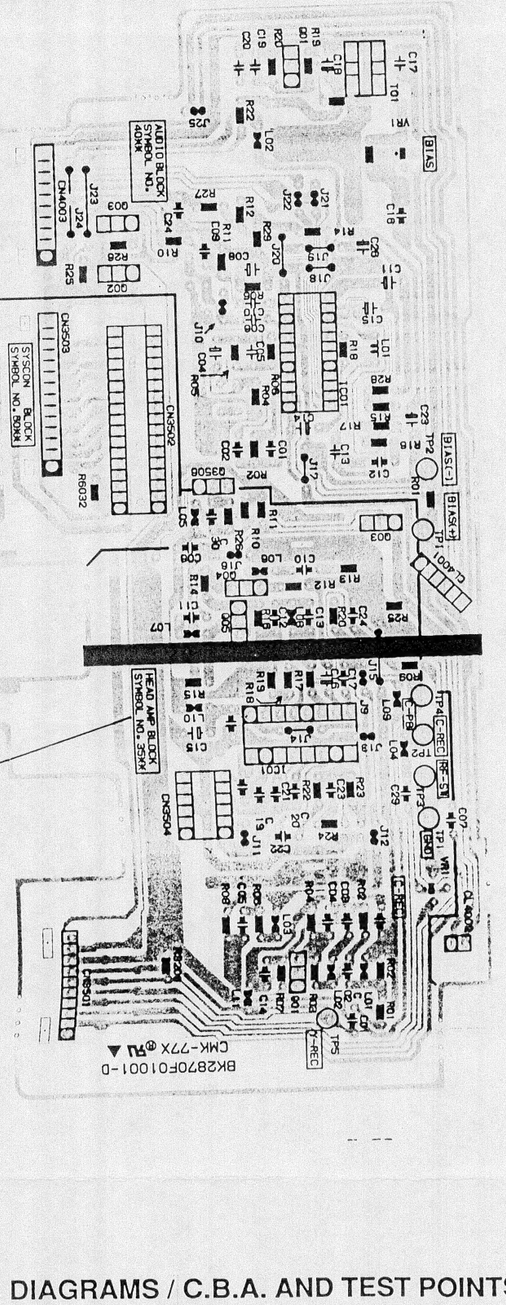
K2870SC-HEAD

Head Amp/Audio C.B.A. (Top View)



Symbol numbers are shown one(1) and two (2) digit(s) in this area abbreviation of 4000 series except jumper wires.

Head Amp/Audio C.B.A. (Bottom View)



Symbol numbers are shown one(1) and two (2) digit(s) in this area abbreviation of 3500 series except jumper wires.

BK2870F01001-D

SCHEMATIC DIAGRAMS / C.B.A. AND TEST POINTS

STANDARD NOTES

WARNING

Critical components having special safety characteristics are identified with a ⚠ by the Ref. No. in the parts list and enclosed within a broken line * (where several critical components are grouped in one area) along with the safety symbol ⚠ on the schematics or exploded views.
Use of substitute replacement parts which do not have the same specified safety characreristics may create shock, fire, or other hazards.

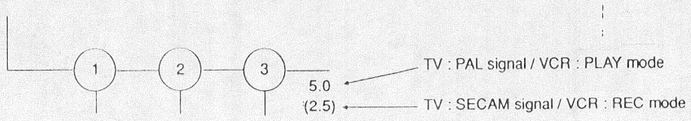
Under no circumstances should the original design be modified or altered without written permission from Funai Electric Company. Funai assumes no liability, express or implied, arising out of any unauthorized modification of design. Servicer assumes all liability.

*Broken Line:

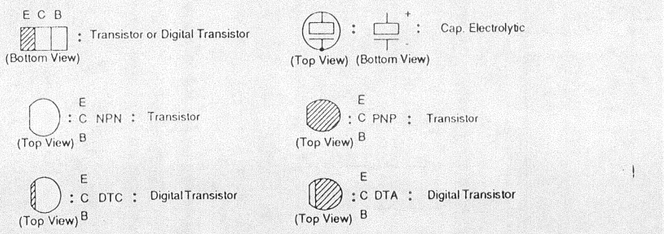
Notes:

① Do not use the part number shown on these drawings for ordering. The correct part number is shown in the parts list, and may be slightly different or amended since these drawings were prepared.
② All resistance values are indicated in ohms ($K=10^3$, $M=10^6$).
③ Resistor wattages are 1/5W or 1/6W unless otherwise specified.
④ All capacitance values are indicated in μF ($P=10^{-6}\mu F$).
⑤ All voltages are DC voltages unless otherwise specified.
⑥ Voltage Indications for PLAY and REC mode on Schematics are as shown below.

Note of Capacitors:
(M) --- Mylar Cap. (NP) --- Non-Polarized Cap. (SC) --- Semiconductor Cap.
Temprature Characteristics of Capacitors are noted with the following:
(B), (YB) --- ±10% (SR) --- ±15% (F) --- +30~-80% (NP0) --- 0±60ppm/°C (SL) --- +350~-1000ppm/°C
Tolerance of Capacitors are noted with the following:
(K) --- ±10% (Z) --- +80~-20%



☆ Capacitors and transistors are noted with the following symbols.



B6407DRW

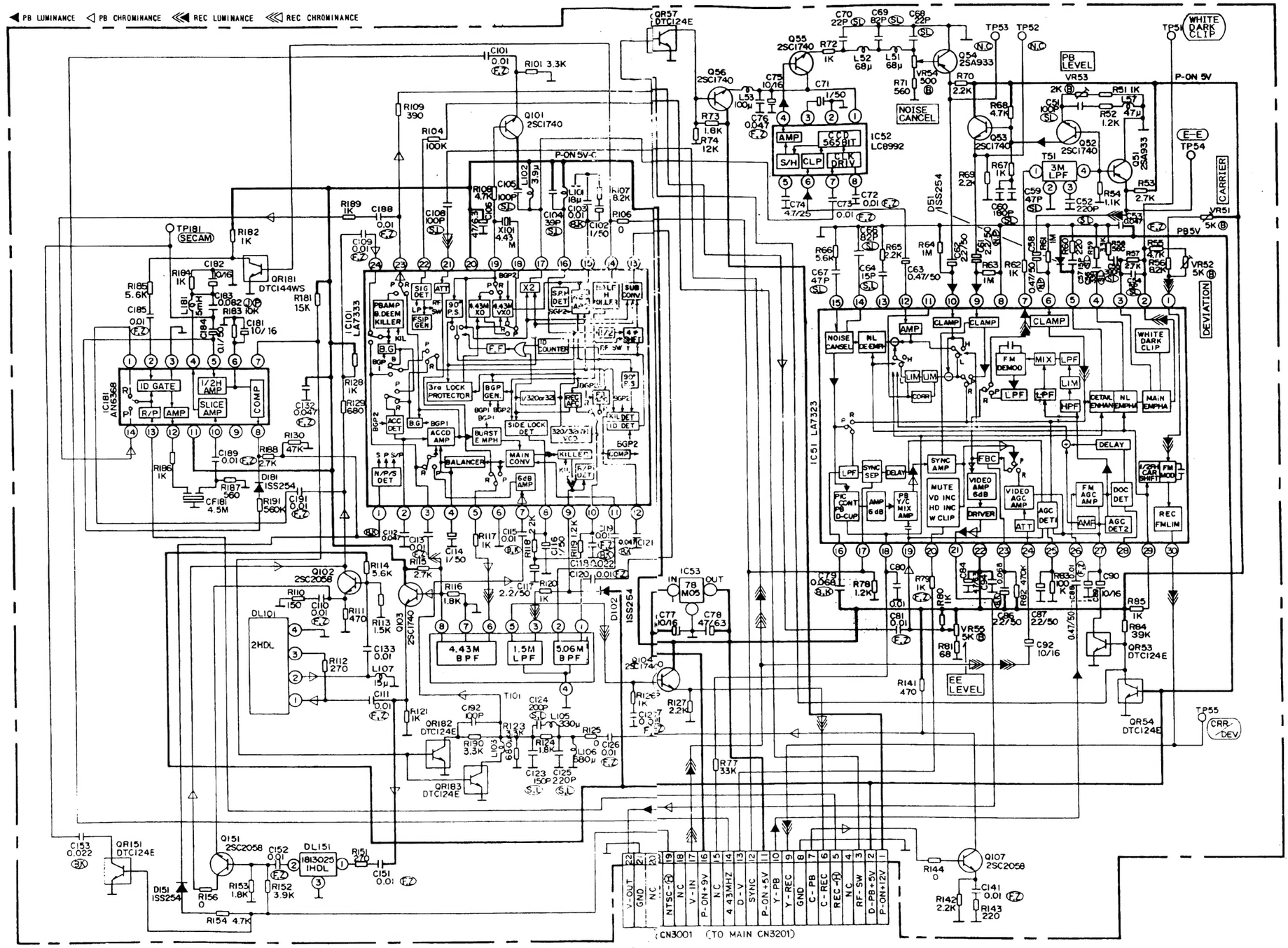
ACE Head Conn. C.B.A.

(Top View) (Bottom View)

FE Head Conn. C.B.A.

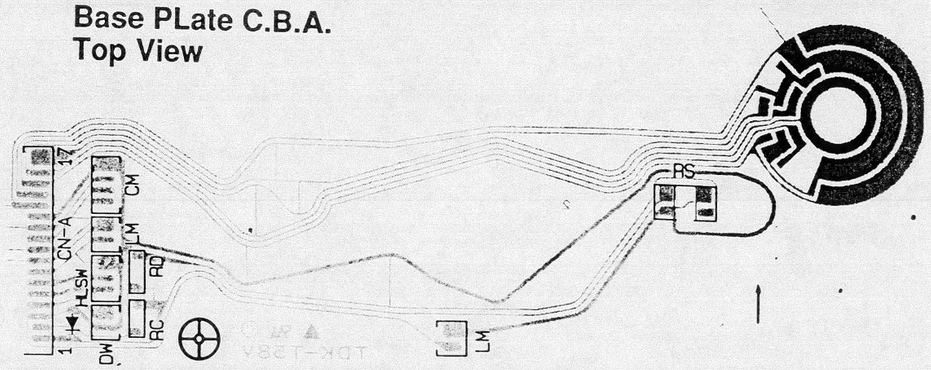
(Top View) (Bottom View)

Y/C Process Schematic Diagram

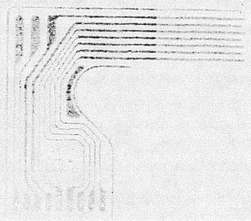


K2870SC-Y/C

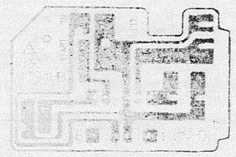
Base PLate C.B.A.
Top View



Start Sensor C.B.A.
Top View

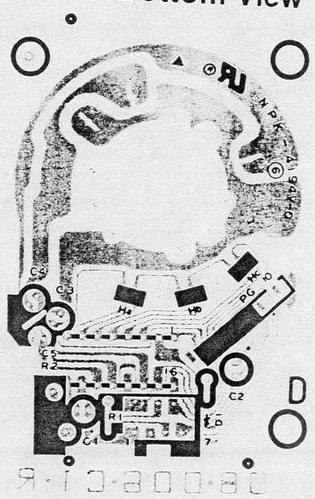


Deck, Front Loading C.B.A.
Top View

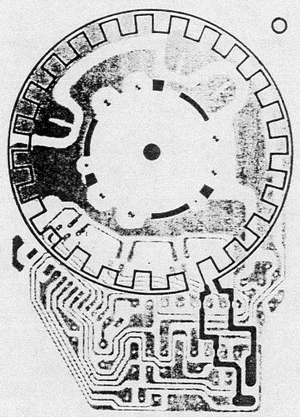


Drum Motor C.B.A.

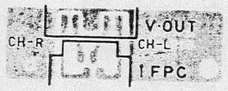
Bottom View



Top View

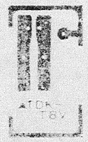


Video Out C.B.A.
Top View



End Sensor C.B.A.
Top View

Full Erase Head C.B.A.



ACE Head C.B.A.

Lamp C.B.A.
Top View

Control Schematic Diagram